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TYPHUS: EXPERIENCES IN THE CENTRAL MEDITERRANEAN FORCE

BY

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PART I

It is well known that the presence of communicable diseases among the civilian population of an occupied country may seriously affect the health of an army in the field. This is particularly true in modern warfare, in which large-scale destruction of towns takes place, with disruption of water, lighting, and sewage systems, and general disorganization of the municipal services. There is considerable movement of refugee civilians from place to place. Shortages of food, fuel, and soap affecting large bodies of people, under no sanitary supervision, still further increase the risks of outbreaks of disease. The breakdown of civilian medical arrangements—general medical practice, public health services, and hospitals—is another factor of much importance. One of the first results of this is the cessation of notification of cases of infectious disease; small foci of infection are thus undetected and unchecked until they have swollen into epidemic form. The Army hygienists, in particular those whose sphere of control is in the forward areas, have considerable responsibilities with regard to civilian preventive medicine. How important these are, and how vital it is to realize their importance quickly, was well demonstrated during the campaign in the Mediterranean theatre. It was soon brought home to hygiene officers that their energies had often to be directed largely towards civilian hygiene matters, otherwise the health of the troops under their care inevitably suffered.

It is not possible to prevent a good deal of close association between troops and civilians. Large numbers of the latter are employed by the armies in docks, depots, and workshops, and also as cooks and mess-waiters. Very many troops are billeted in houses, some of which are still occupied by adults and children. Regulations prohibiting contact with the local populace can only be partially enforced; this is also the case with regard to the use of eating-houses and the purchase of food and drink. As a consequence of this inability to segregate the military and civil populations, outbreaks of infectious disease often threatened to spread to the Allied armies. The diseases that caused chief concern were smallpox, typhoid, dysentery, diphtheria, venereal disease, and typhus, all of which had an epidemic incidence among civilians. Malaria came into this category when large civilian reservoirs of infection added to the risk to the troops operating in the area.

A great deal of the work of tackling these problems fell on the shoulders of Field Hygiene Section officers and Deputy Assistant Directors of Hygiene, especially in the battle zones. In the rear area, too, these officers did excellent work in full co-operation with the medical branches of the Allied Military Government and the Allied Control Commission. The energetic way in which they set about the task, under the most difficult conditions, often with the scantiest of assistance, has perhaps not been fully appreciated. It was a factor of no small import in the successful conclusion of the campaign.

Typhus was extremely prevalent in North Africa, Italy, and Yugoslavia. The dangers of the disease spreading to the troops, and the occurrence of severe outbreaks among them, were well appreciated. The number of cases that actually occurred was, however, negligible. The factors influencing this escape are discussed in this paper. History is full of examples of how this grimly dramatic disease has devastated armies in the field; the lay officer is thus deeply impressed by its dangers. Fuller co-operation can generally be looked for from him than is the case with less "spectacular" diseases such as malaria, typhoid, and dysentery. It is a matter for surmise whether, if equal collaboration had been forthcoming in the prevention of those other diseases, a similar degree of success would not have been achieved and an enormous loss of man-power avoided.

NORTH AFRICA

The projected Allied landing in North Africa in November, 1942, was a closely kept secret, which undoubtedly contributed to its initial success. Senior hygiene staff officers were not admitted to the preliminary discussions (although many junior "A" and "Q" officers were), and it was, to them, an unknown venture, both geographically and epidemiologically. This omission was unfortunate and unnecessary. It served to confirm the fact that the role of the Army hygiene organization as an essential factor in the success of a campaign had not yet been properly appreciated. Indeed, it was only the stark reality of heavy casualty rates from preventable sickness that, in the months and years to come, gradually brought the lesson home.

Anti-typhus measures in the British Force consisted in the provision of adequate quantities of anti-louse powder (A.L.63) and the inclusion of portable disinfectors as part of the equipment of regimental medical officers, field hygiene sections, and mobile bath units. The portable apparatus is capable of dealing with nearly 100,000 blankets or 13,000 sets of clothing per division each week. Inoculation with anti-typhus vaccine (Cox's) was confined to medical staff officers. Before embarkation, and particularly during the sea voyage after the destination had been made known, propaganda talks to officers and men were given as often as possible. Some at least of this and previous hygiene education fell on responsive ears, as was shown by the fact that some units had a much lower sick rate than others exposed to the same conditions.

As soon as possible after landing a visit was paid to the Chief Public Health Officer for Algeria. Dr. Grenouilleau was very helpful throughout. He placed at our disposal all available epidemiological data, giving advice on malaria control and other public health problems. Dr. Émile Sergent and the other officers of the Pasteur Institute, Algiers, were also extremely co-operative. It was only occasionally that the political tension which was such an unfortunate feature of the Algerian venture affected the happy relations between British and French doctors. There were, however, a few instances in which doctors with strong Vichy sympathies failed to co-operate; their attitude of prevarication and indifference was in marked contrast to that of their colleagues.

Incidence of Civilian Typhus

It was at once evident that a large-scale typhus epidemic had swept through Algeria during the previous four years. There were indications that it would increase in intensity during the winter of 1942 and the spring of 1943. The statistics given by Dr. Grenouilleau were as follows:

Number of Typhus Cases, Algeria

Oct., 1939 to Sept., 1940	..	..	Arabs, 2,016;	Europeans,	37
,, 1940 ,, ,, 1941	..	..	,, 9,767;	,,	509
,, 1941 ,, ,, 1942	..	..	,, 35,059;	,,	2,837

He was of the opinion that this did not represent the true incidence, and the actual numbers were at least six times the

recorded. The estimated numbers during the three previous years were: 1939–40, 11,000; 1940–1, 55,000; 1941–2, 300,000. Graphs showed that each year the number of cases rose rapidly until May/June. A sharp fall did not begin until July/August. The continuance of the epidemic during the hot Algerian summer seemed to be very significant.

The death rate was not easy to compute in the case of Arabs. Among cases in hospital it was 29% in Europeans of all ages and 22% in Arabs. During 1942, 700 Europeans and 40,000 Arabs died of typhus in Algeria. There was also information that typhus was present in Tunisia, but exact details as to the extent of this outbreak were not obtained until much later.

Control measures were not put into operation by the French authorities until late in the year 1941. These consisted of:

(*a*) Systematic vaccination, using chiefly living vaccines.

(*b*) Restriction of movement.

(*c*) Rounding up of destitute and infested people, and delousing them.

(*d*) Surveying affected communities and paying attention to the people in prisons and hospitals, the members of the Youth Movement (Chantier de Jeunesse), etc.

Of these measures vaccination was considered to be the most important. It is probable that measures *b* and *c* did not operate to any great extent. The Arab population had an extremely high infestation rate. The depredations of the Italian and German Armistice Commissions had resulted in a severe shortage of food; soap and fuel were almost unobtainable. The Arab population was literally in rags, and material for clothing was completely wanting. Disinfestation apparatus was very limited even in the port of Algiers. The cleansing of the infested Arab population must therefore have been a problem incapable of solution with the means at the disposal of the French authorities.

Vaccination against Typhus

This was begun at the end of 1941. The living vaccine of Blanc and Baltazard was used for the Arab population alone. Two million doses were distributed. Blanc vaccine consists of the dried faeces of fleas infected with murine typhus, dissolved at the time of inoculation in a bile-salt solution—1 mg. in 100 ml. It is given in a single dose of 1 ml. Inoculation must be completed in half an hour. After that time the vaccine increases in virulence appreciably. Those vaccinated first do not, therefore, receive the same type of dose as those injected at the end. It was stated that ill effects were rare, but that up to 5 or 6% got murine typhus (as compared with Blanc's figure of 1.5%). All the murine cases recovered. The vaccine was said to be an excellent collective prophylactic but not an ideal individual one. It was not contended that all persons receiving the "virus-vaccin" escaped typhus—many had unmodified attacks—but mass vaccination *did* "break the chain of infection," and it caused "local extinction of the epidemic." A large proportion of the people in a community must be inoculated; 60% of these acquire a "durable and solid immunity." The aged and those with cardiac, renal, or pulmonary disease were excluded. The value of a one-shot method of vaccinating an Arab population is obvious, and from the records shown by Dr. Grenouilleau the results were excellent.

Mass vaccination was always followed by a dramatic fall in typhus cases—particularly so in communities where cases were on the increase. The morbidity rate fell in April, whereas it persisted in control unvaccinated towns until the end of June. In Tebessa, for example, a widespread outbreak was extinguished after 95% of the Arab population had been vaccinated. Similar results were obtained in the native quarter of Algiers (the Kasbah) and many other places where the epidemic was spreading with alarming rapidity.

It was noticeable that during 1943 practically no cases of typhus occurred in towns where vaccination had been carried out during the previous two years. This was of importance to us, for troops stationed there ran no risk.

The killed vaccine of Durand and Giroud was also used, but only to a limited extent. Owing to shortage of materials, such as phials, ampoules, and packing, only 71,000 doses could be distributed between the end of 1941 and the time of the Allied occupation. When the necessary requirements were made available the Pasteur Institute at Algiers was able to produce this vaccine in very large quantities. A large amount was obtained by us for use in Algeria, and also Italy and Yugoslavia. Prior to November, 1942, doctors and other exposed persons, such as policemen and railway and prison employees, were the only groups given this vaccine. It is of interest to record that the Algerian doctors did not regard this vaccine with enthusiasm; many were frankly sceptical. (This was also the case in Naples at a later date, when Cox's vaccine was made available to members of the Italian medical and nursing professions and the response in both groups was poor.) At that time 29 Algerian doctors contracted typhus. Eleven of these had been vaccinated; they all recovered. Of 18 who were unvaccinated 13 died. There were many cases of typhus among the 71,000 vaccinated, but I was informed that there were no deaths. These vaccines are prepared from mouse or rabbit lungs, and are formol-killed. Three doses are given at weekly intervals—0.5 ml., 1 ml., and 1.5 ml. A febrile reaction follows the first injection in about 40% of cases.

By the end of 1942 two millions out of a population of eight to nine millions had been inoculated, most of them with the living vaccine of Blanc. Since the vaccine gives immunity in only about 60% of cases this meant that 1,200,000 people were immunized. This was a magnificent achievement in view of the enormous difficulties to be overcome under wartime conditions.

Position of the Allied Armies

Mention has already been made of the preparedness of the British Army against a typhus risk. The American Forces were all inoculated, but for the first few months British troops were entirely unprotected. Conditions were favourable for the spreading of typhus to the armies: the weather on the Atlas plateau was cold, bathing and laundry arrangements were difficult, and soap and fuel were not plentiful; the war was mobile, and troops occupied or passed through overcrowded Arab villages; the natives thronged railway stations and staging points; Arabs were recruited for labour companies for employment in docks and railway stations; a good deal of casual labour was also engaged. Billeting in Arab houses, too, proved a great danger. One small unit had 90 cases of heavy louse infestation after a short period of billeting in some of these houses.

The first preventive action taken was the publication of routine orders pointing out the typhus danger and the risks attendant on close contact with Arabs. The regular use of A.L.63 powder, by hand-dusting, was ordered in the case of all troops in affected areas, and those, such as dock and railway workers, military and traffic police, who were exposed to special risks.

Propaganda was intensified. Roadside notices, painted by field hygiene sections, were affixed to the walls of houses in towns, and to telegraph poles along the main highways. Wood and paint were in theory unobtainable, but the signs appeared notwithstanding. The road from Algiers to the Tunisian frontier presented a strange sight: along its 500 miles of tortuous length were to be seen thousands of notices giving warning of the dangers of typhus, malaria, dysentery, and venereal disease. Some were crude and couched in terms that offended the fastidious, others were clever and well executed, but the propaganda value of all was undoubted. These signs played a leading part in the campaign against infection. The wooden signs were regularly torn down by the Arabs for use as firewood. They required constant replacement, and even when corrugated-iron squares superseded them these also disappeared. The Services newspaper, the *Union Jack*, which was started later, was always willing to give us some of its limited space for propaganda. This took the shape of leading articles, daily "health hints," and cartoons. Posters were produced by many formations, and some of the ideas were excellent. Until such time as we had facilities for printing, duplicating machines of the signal services were used. Many hundreds of coloured posters were produced in this way. Films on the louse were shown to base troops, but there were few projectors. The Royal Navy helped us in this. Civilian apparatus was also borrowed, and even the regimental depot of the Zouave regiment was able to lend us a projector. Lectures and talks by hygiene and regimental officers were given whenever possible, and courses of instruction were started

by the hygiene sections. Stress has been laid on the propaganda aspect of prevention because it is believed that this played a conspicuous part in the prevention of typhus and other diseases.

Orders were issued concerning personal cleanliness and bathing; regimental bath discipline was closely watched, and regular medical inspection of all troops insisted upon. A large number of shower-baths and Serbian barrel disinfestors were improvised and distributed by the hygiene sections. Although authority was given for the triplication of portable disinfestors, the supply position never permitted this to be carried out except to a limited extent.

Native Labour Companies

The decision to form these companies imposed heavy additional tasks on the overworked hygiene section staffs. All the recruits were heavily infested, and they were a dangerous potential source of typhus. All were bathed, disinfested, and examined before being drafted away. There were many practical and administrative difficulties, and the keenest supervision was necessary. For instance, the Arab is loath to part with his turban. But since the head louse was a possible source of danger, he could not be allowed to retain it unless it had passed through the disinfestor. These and many other problems were overcome. In view of the typhus danger, it was decided to inoculate all the recruits. The only vaccine procurable in any quantity was the living vaccine of Blanc and Baltazard. This was used in many thousands of doses with no serious sequelae; a number of febrile reactions occurred but no definite cases of typhus. There was regular medical inspection of these labourers, and A.L.63 powder was used by them periodically. Casual Arab labour was also a problem. These men lived in their own homes, and it was impossible to keep them free from infestation. Cases of typhus occurred in many of these workers. In one town occupied by a large number of troops the French authorities would not admit these cases to the local hospital. Since it was essential to isolate them, the A.D.M.S. took over a building in the town, which was staffed with the help of French Red Cross nurses. The cases were admitted there under the care of an Arab doctor. This doctor worked with a will throughout, and gave us all the assistance in his power. In this town the French health officer was not co-operative; attempts to get him replaced were unavailing.

French and Arab physicians suggested many different methods of treatment. The French favoured the administration of massive doses of NaCl. This was found to be ineffective when tried on British cases. The turpentine blister was strongly advocated by the Arabs, and remarkable successes were attributed to its use. I was assured by an Arab physician that out of 71 cases so treated 62 developed a fixation abscess and recovered. Nine did not develop abscesses, and five of these died. The four who recovered were stated to have produced abscesses "spontaneously as a complication." British Army cases were not given this treatment.

Lethane belts were available in fairly large quantity, but they were never found to be practicable for use, even by natives, in the hot weather; they were therefore seldom employed in Algeria or Italy.

Typhus in the British Forces

There were about 40 cases of typhus in 1943, but at least six of these were not louse-borne (see Table). Many of the cases were brought into association with Arabs in the course of their work, but in others all contact with natives was denied. Only two were found to be lousy or showed evidence of louse bites on admission to hospital. Bath discipline was good in all the units concerned, but A.L.63 was often being used haphazardly or not at all. Two officers were affected. Both had lived in premises occupied by Arabs a short time before. Prompt civilian notification records were not being received in some districts; the M.O.H. of an area from which many of our cases came professed little knowledge of a severe Arab outbreak near the town concerned.

Table showing Typhus Cases in the British Forces

		Sicily	N. Africa	Italy	Total	Deaths
1943	Louse-borne	—	36	3	39	
	Other forms	—	6	5	11	
	Total	—	42	8	50	8
1944	Louse-borne	1	0	2	3	
	Other forms	1	4	7	12	
	Total	2	4	9	15	3

One of the British cases was fully inoculated; three had received one injection, 60, 26, and 22 days before the onset respectively. All of these recovered. Records of 25 cases occurring between January and April, all louse-borne, show the death rate to have been 32%. The cases were severe in type and clinically suggestive of classical typhus. Rashes were typical and constant. The Weil-Felix reaction was consistently useful in diagnosis, but agglutination was not usually appreciable until the end of the first week. Between the 7th and 21st days the titre rose from 1:250 to 1:10,000. On an average our cases were diagnosed on the 10th day of illness. Deafness was a noticeable symptom in most of them.

A case of murine typhus occurred in a member of the R.A.F. He was stationed in an isolated post. The local French doctor prevailed upon him to have an injection of the living vaccine of Blanc. He became ill on the 12th day, but not seriously. The illness was suggestive of mild enteric, but agglutination tests were negative. His rash was scanty, and not typical of typhus. Profuse sweating was a marked feature. His case was diagnosed as murine typhus in retrospect, as a result of Weil-Felix agglutination. Later in the year, and the following year in Italy, there were a few cases of fièvre boutonneuse, most of which were probably infected in Sicily or Southern Italy. About 20 cases occurred among American troops, none of which is said to have been fatal. It is significant that all the Americans were inoculated with Cox's vaccine.

Many Algerian doctors subscribed to the belief that airborne transmission by way of the mouth or conjunctivae was a not uncommon source of infection. In my experience there was little evidence to support this theory, though conditions were very favourable for the spread of a disease which is capable of transmission by this means. The streets of towns and villages occupied by troops were generally dense with Arabs, whose robes were billowed out by the breezes of the windy Atlas plateau. The Arab delouses himself by hand-picking the lice and dropping them alive to the ground. In the case of children the disease may be symptomless, and many ambulatory cases occur; these nevertheless infect the louse. The air of the dusty Algerian highways must have been well charged with dried louse faeces! Had transmission in this way been even remotely possible the uninoculated British Forces must have suffered heavily.

TUNISIA

Details as to the prevalence of typhus in Tunisia were not at first obtainable, but it was understood that the Algerian outbreak had also affected Tunisia. It soon became evident that this was a fact. When official returns from "Free Tunisia" were furnished they showed 200 reported cases during the last week in February, about 500 in March, and 300 in the first ten days of April. These figures represented only a part of the actual total. A few First Army troops were infected in Tunisia. Vaccination and disinfestation of the Arabs were begun. This was a difficult and dangerous undertaking in the forward areas, frequently interrupted by Axis dive-bombers and often concluded in slit-trenches. Field hygiene sections and civilian doctors both played a leading part in this work.

After the fall of Tunis it was learned that many cases had occurred in the Axis Armies; the Germans, it was said, suffered to a greater degree than the Italians, which is surprising. Anti-typhus inoculation (? Cox type) was started in the German Army, but no Italian units were inoculated. At least six prisoners of war developed typhus after capture. There was a grave danger of this, owing to the high infestation rate in the German and Italian prisoners: 40% of German and nearly 80% of Italian prisoners were lousy. Bathing and delousing schemes were put into operation at once, but the disorganization following such a massive capitulation, and the shortage of

water, fuel, and equipment, made it a herculean task. It was a blessing that the typhus season was well advanced by this time. The weather was hot, and the prisoners wore the minimum of clothing. As organized prisoner-of-war cages were established, and satisfactory arrangements were made, the danger passed.

Relapsing Fever

The presence of this disease in North Africa has a bearing on this discussion. Relapsing fever is endemic in Algeria, and during 1943 twelve British troops were affected. The disease increased to epidemic form at the end of 1944 and early in 1945. It spread quickly from Algeria to Tunisia, where 1,746 cases occurred during the last two weeks of February. In January, 1945, there were 6,000, and in February 7,400 cases, including 80 weekly in a civil prison. It was reported that the epidemic was assuming enormous proportions in the Saharan towns and those of the Tel plateau. This disease is spread in epidemic form by lice; it is thus evident that the native infestation rate was still very great. One would therefore have expected the incidence of typhus to remain at a high level. The fact that a large number of the Arabs had already had typhus is not sufficient to account for the dramatic fall in morbidity in 1943, 1944, and 1945 in a heavily infested and economically depressed people. Vaccination was therefore effective despite the fact that infestation remained.

Reasons for the Low Incidence of Typhus among Allied Troops

Of first importance was the fall in the number of Arab cases in 1943, when the anticipated increase did not occur. This was probably the result of the mass vaccination scheme of the previous two years. Vaccination was continued in 1943, when notices appeared in the towns and in the Press stating that it was compulsory. All persons between 10 and 70 years were required to present themselves for inoculation; fines ranging from 100 to 1,000 francs were payable in default.

The fear of typhus, stimulated by intensive propaganda, made a great impression on the troops, and was a potent reason for our escape. The military police, despite their numerous other commitments, gave great help in enforcing orders and in ensuring that "out of bounds" notices were not ignored. Bath discipline was good. A.L.63 powder, although often used carelessly and irregularly, was extremely effective. The wide dispersion of units and the careful selection of camps probably helped also. Inoculation was not a factor of any importance, for until the late spring and summer the number protected was negligible.

(Part II will appear in next week's issue.)

DUODENAL ULCERATION: A GASTROSCOPIC STUDY OF THE GASTRIC MUCOSA AND ITS SURGICAL SIGNIFICANCE

BY

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The problems associated with the surgical treatment of duodenal ulceration and of some of the complications which follow in its wake in a very large proportion of cases have for many years occupied the mind of the profession, yet it seems that little universal progress has been made in the past quarter of a century in the treatment of a disease which still produces much physical and mental suffering in the individual and much economic loss to the community at large. With these problems in mind, I have made an intensive gastroscopic study of the mucosa of the stomach in the presence of duodenal ulceration, as well as a study of the mucosa in cases following operations for this malady, with a view to eliciting the relationship of the anatomy and physiology of the morbid mucosa and its transmutation as a result of surgical treatment, and its bearing upon the subsequent condition of the patient.

A close study of the aetiological factors said to be associated with duodenal ulceration reveals that a definite relationship exists between this pathology and a deranged physiology of the stomach and, indeed, that of the greater part of the alimentary tract. It would therefore be as well to give consideration to the individual who presents himself with established ulceration or, on the other hand, merely with symptoms suggesting the outlines of the image, which, as time goes on, gradually evolves itself into the completed picture of a subject with duodenal ulceration. He is an extremely sensitive and hyper-irritable type, in a constant state of nervous tension and emotional instability; vasomotor disturbances are present and, above all, he is stomach-conscious. These nervous influences play a very important part by virtue of the fact that they are referred to his alimentary tract and can be readily demonstrated by the radiologist during an *x*-ray examination after a barium meal. They further manifest themselves in certain spastic phenomena, of which spasm of the pylorus and duodenum and of the descending colon are typical examples. So very often little importance is attached to these phenomena at the time of the examination or, indeed, to any subsequent report of these radiological findings or their possible interpretation. When spasm occurs in a vascular structure a temporary impairment of the blood supply to the part concerned results, with local loss of viability. These changes commonly occur in the duodenum, and the local loss of viability produces a condition in which the mucosa becomes vulnerable to injury by contact with irritant or insufficiently digested food; if in addition local necrosis occurs it is not difficult to visualize the possibility of ulceration in the presence of a high acid–pepsin content of the gastric juice. The duodenum houses a mechanism which is stimulated by the presence of food into liberating the hormone enterogastrone, which itself controls gastric secretion and peristalsis. When spasm and local loss of viability occur this mechanism fails, and the normal gastric function is now replaced by hypermotility and rapid emptying of insufficiently digested food, which may damage the vulnerable duodenal mucosa; such injury is aggravated by the high acid secretion which is a constant factor in the type of individual described.

The surgeon is frequently called upon to deal with a perforation of or haemorrhage from a peptic ulcer, but a precise history of gastric symptoms is very often lacking in these examples of "silent ulcer"; later inquiry into the health and habits of these patients reveals that the various nervous phenomena did however exist, and even at an early age a test-meal examination would show a marked increase in the amount and acid content of the gastric juice.

Normal Gastric Mucosa

As seen through the gastroscope the gastric mucosa consists of a thick transparent smooth orange-red lining thrown into many folds throughout the greater part of the stomach. These folds are tortuous in some areas and resemble the convolutions of the cerebral cortex. The folds can be straightened out or made to disappear altogether when the stomach is distended with air, and this is an important point in differentiating the normal from the hyperplastic type of mucosa, in which the folds in

FIG. 1.—Normal mucosa on anterior wall (left of picture) and greater curvature.

FIG. 2.—Normal mucosa on posterior wall and greater curvature with little inflation.

certain areas remain tortuous even with full inflation. The smoothest part of the mucosa is found along the lesser curvature of the stomach, but occasionally one or two very thin parallel folds may be seen here. Both the greater curvature and the posterior wall of the stomach present a network of many folds, parallel and slightly tortuous in the former situation, but much

more tortuous and thicker on the posterior wall (Figs. 1 and 2). A few thin parallel folds are present in the pyloric antrum, but these readily disappear with very little inflation and are not often observed. The surface of the mucosa is very smooth and glistening in all areas of the stomach; many high lights are sprinkled over the gastroscopic picture, and these are due to the diffused glow of the lamp over the moist surface. When secretion is excessive the number of high lights is correspondingly increased; if gastritis is present and some of the ducts become blocked, secretion into the cavity of the stomach is diminished and the number of high lights seen is very small, or they may be absent altogether.

Gastric Mucosa in the Presence of Duodenal Ulcer

In a series of 50 gastroscopic examinations of cases of duodenal ulceration I found that in 76% the mucosa was of the hyperplastic type; the mucosa of the remainder varied a little in the development of the folds, but was considered to be within normal limits. This hyperplasia manifests itself in the formation of very many *crowded*, thickened, and extremely tortuous folds which cannot be straightened out even after full inflation of the stomach, and which certainly cannot be made to disappear. These crowded folds are most marked upon the posterior wall of the stomach; they develop along the greater curvature and may replace the straight folds normally present on the anterior wall. There is thus found a more or less generalized hyperplasia or hypertrophy of the gastric mucosa, with an increased complement of glandular elements which is capable of producing an excessive secretion of a hyper-acid juice.

Gastric Mucosa in Non-obstructive Cases

In addition to generalized hyperplasia gastritis may be present, and this manifests itself by areas of oedematous folds and scattered patches of viscid adherent greyish-yellow secretion, which occupies chiefly the valleys between these folds; high lights are markedly diminished over these areas of superficial gastritis, and the mucosa is vulnerable and may readily bleed during the examination. Gastritis is not necessarily an accompaniment of duodenal ulceration, but, when present, disappears with adequate medical treatment although the ulcer itself may still remain. When an ulcer has healed under a medical regime the hyperplastic nature of the mucosa does not change. Sometimes a gastric ulcer may also be present in addition to the duodenal ulcer, and I have observed three such cases in the series. The incidence of this phenomenon varies, and has no relation to the mucosa of the stomach; Carey and Ylvisaker (1942) have reported as many as 9 out of a series of 70 cases of duodenal ulceration in which gastric ulcer was also present.

Mucosa in Obstructive Cases

It is not sufficiently appreciated that obstructive symptoms following upon ulceration may be entirely due to local oedema and spasm of the pylorus. First, this is borne out by the fact that cases in which the radiologist reports a delayed emptying of the stomach will improve with adequate medical treatment and a little patience if the cause is essentially one of oedema and spasm, and it is always worth while repeating the *x*-ray examination two or three times after intervals of three weeks. Secondly, a large number of these cases are operated upon following the report of obstruction, and a gastro-enterostomy performed. When these patients are subsequently seen because of a recurrence of symptoms, and a fresh *x*-ray examination is carried out, it may surprise the surgeon when the radiologist reports that "a large portion of the meal passes through the pylorus." Obviously, then, these were cases where the obstruction was non-fibrous and purely transient.

The condition of the mucosa in these obstructive cases varies considerably; viscid adherent secretion and a dulling of or granular change in the surface of the mucosa constantly take place over large areas, but these mucosal phenomena disappear when the obstruction is relieved. If, however, obstruction has periodically occurred, or if the obstruction is of the fibrous variety and progressive, the changes seen in the mucosa are very much more marked: not only is there an increase of the pathological secretion but the folds are very oedematous and eventually become broken up into raised nodular segments which resemble pavement or cobble stones closely packed together. These changes occur in the valleys between the folds as well as on the folds themselves. This condition is sometimes known by the name of "chronic hypertrophic gastritis," and must not be confused with simple hyperplasia of the mucosa. Occasionally the pyloric antrum becomes the seat of these changes, but only after the onset of true fibrous obstruction.

Fifty Cases of Duodenal Ulcer

Hyperplastic mucosa	Total 38 cases	76%
Hyperplasia with no other changes	14 cases	38%
,, and superficial gastritis	15 ,, ...	39%
,, ,, nodular gastritis	7 ,, ...	18%
,, ,, antral gastritis ..	2 ,, ...	5%
Normal mucosa	12 cases	24%
Superficial gastritis	3 cases	25%

Post-operative Recurrence of Symptoms

It is not my intention to enumerate the many causes of recurrence of symptoms after operation for duodenal ulceration. Patients often present themselves with symptoms similar to those for which they were operated upon. These symptoms may be due to inflammatory changes which were present in the gastric mucosa before operation, and which persist after operation. It may be well worth while to gastroscope the patient before any operation is contemplated, in order to visualize the gastric mucosa and its condition. With the failure of the short-circuit operation in many instances—for this had become a disease in itself rather than an intended cure—more radical measures were resorted to. Although advocates of gastro-duodenectomy and partial gastrectomy have shown individually results which should be very convincing, yet it is a fact that these formidable procedures still have a high mortality in some hands, and even a great degree of morbidity in others. Stomal ulceration may occur after partial gastrectomy (Fig. 3), and I have observed such cases; doubtless more

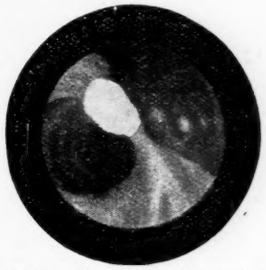

FIG. 3.—Stomal ulcer 18 months after partial gastrectomy.

cases will be recorded as gastroscopic examinations are increased. Inflammatory changes in the mucosa of the gastric stump must also be included in this category, so that this operation is not altogether a solution for a very important problem in surgery. In addition, the creation of a very grossly distorted anatomy and a grossly deranged physiological function of the stomach does not seem rational in the quest for a cure of a condition the aetiology of which is still unknown. The initial success of partial gastrectomy may be hailed by both patient and surgeon, but the morbidity is not quite appreciated because with a recurrence of symptoms a large number of these patients change their hospital. Even at the best the patient fails to regain weight or to admit of being comfortable; he remains stomach-conscious.

To ensure success of any medical regime in the treatment of duodenal ulceration it is essential that the amount of gastric juice and the degree of acidity be considerably reduced; whichever method achieves its object in healing the ulcer, the lowered acid content of the gastric juice is but a passing phase. When surgical measures are indicated it is desirable not only to obtain a physiological reduction in the activity of the stomach but to ensure that this reduction is permanent or at least prolonged, because very real risks of complications ensue on any surgical procedure if the original high acidity remains. The high-acid-secreting hyperplastic type of mucosa is very liable to stomal ulceration after the operation of gastro-enterostomy, and indeed after any surgical procedure if the high acidity is allowed to remain. Of those cases of stomal ulcer observed by me in the course of gastroscopic examinations, 65% occurred in the

presence of hyperplasia of the gastric mucosa. This operation alone should clearly be avoided when the mucosa of the stomach is of this type. Bearing this all-important problem in mind, it may be more rational to adopt a simpler and apparently surer method of attaining what the more formidable methods have failed to do, and in this respect we have seen some excellent results which have been obtained by Somervell (1942), who advocates ligature of a large proportion of the arteries which supply the stomach. The hypersecretion and acidity are immediately reduced, and remain so for a very long time.

In order to evaluate the results of ligature, I have observed the changes in the mucosa of the stomach in which I myself carried out this operation. It was seen that the mucosa in simple hyperplasia had undergone a marked transmutation from the hyperplastic state to one which could be considered as being well within normal limits. These cases were gastroscoped before (Fig. 4) and six months after (Fig. 5) gastric arterial ligature

FIG. 4.—Case of duodenal ulceration: hyperplastic mucosa with crowded folds.

FIG. 5.—Same case as in Fig. 4 six months after arterial ligature. Note regression of folds.

had been performed; the folds were now far less crowded and tortuous, and inflation straightened many of them. In the presence of fibrous obstruction, posterior gastro-enterostomy was performed in addition to ligature, but where nodular changes in the mucosa had occurred these remained unchanged after an interval of six months. It is possible that earlier treatment would have prevented these nodular changes from developing.

Although these conclusions have been drawn from a limited number of cases, it is possible to correlate the reduction of gastric acidity with the changes in the nature of the mucosa following upon ligature. This regression must be part of an inherent power peculiar to the mucosa, in which reverse changes —namely, regeneration under certain conditions—may also take

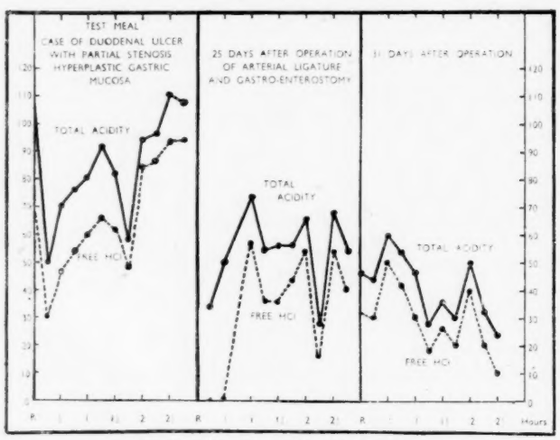

Chart of a case of duodenal ulcer.

place: the thinned atrophic mucosa associated with pernicious anaemia will regenerate and regain its thickness with suitable liver therapy, and the reappearance of folds will produce a picture which is difficult to distinguish from the normal.

It is thus reasonable to conclude that there is sufficient justification to look upon these more conservative surgical measures in the treatment of duodenal ulceration as heralding a tremendous field of opportunity for further work in this direction. The clinical and physiological results, as well as the gastroscopic findings following upon arterial ligature alone, or in conjunction with gastro-enterostomy (see accompanying Chart of a case) if fibrous obstruction is present, are such that even the most sceptical would agree on the value of, and the desirability for pursuing, measures less drastic than partial gastrectomy if these measures attain their object in reducing the high acid content of the gastric secretion without a gross distortion of the anatomy and physiology of the stomach.

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THEORY AND NOMENCLATURE OF THE Rh TYPES, SUBTYPES, AND GENOTYPES

BY

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The Rh blood types have been the subject of many communications to the *Journal*. The purpose of this article is to correct several statements which have appeared in some of these reports, in order to prevent widespread confusion in an already highly complicated subject.

In a recent letter to *Nature*[1] Fisher and Race state: "The notation has been frequently changed, and we feel that only a notation which designates unambiguously the antibodies, the genes or gene-complexes, and the antigens with which these antibodies react, can avoid widespread confusion." With the latter part of this statement I agree whole-heartedly, but would add that the notations should be made as *simple as possible* to favour their fluent use, both orally and in print, by medical men and geneticists, in order to further the work in the field. This has been my aim ever since my first work[2,3] on the Rh types was done in 1940–2, at which time only the anti-Rh_0 and anti-Rh′ agglutinins were available. Changes were made only when advances in knowledge, such as the discovery of the agglutinin anti-Rh″ and the Hr agglutinins, made slight revisions and additions to the nomenclature necessary. As explained by me[4] in a historical article presented before the New York Academy of Sciences, and also by Taylor and Race,[5] these new findings did not change our previous results but merely added to them, and in revising the nomenclature as many of the old names as possible were always retained. The new findings required the creation of some new names, but at all times the principle of keeping the designations as simple as possible and unambiguous guided my actions. Some confusion has been created by the attempt of other workers[6] to introduce numbered nomenclatures which fail to take into account the established genetic and serologic knowledge of the subject. Considering only the four agglutinins—anti-Rh′, anti-Rh″, anti-Rh_0, and anti-Hr′—$4\times3\times2\times1$ or 24 such possible numberings can be devised, so if the use of numbers were encouraged a far worse confusion would result than the Moss–Jansky jumble. Luckily, such numbered systems have found favour only in the laboratories of their originators, and so have caused little or no harm to date.

The letter by Fisher and Race continues: "Six of the gene designations here adopted are due to Wiener, but for the antibodies his notation seems arbitrary. While Cappell's names, such as anti-C, anti-D, anti-E, and anti-c, are unambiguous, Wiener's do not seem satisfactory, since, for example, the 85% reacting serum is called anti-Rh_0 whereas besides Rh_0 it reacts with the genes Rh_1, Rh_2, and Rh_Z." As can be seen from Table I,

TABLE I.—*Scheme of the Eight Rh Blood Types*

Clinically Rh-negative Individuals (15%)				Clinically Rh-positive Individuals (85%)			
Designations of Types	Reactions with Antisera			Designations of Types	Reactions with Antisera		
	Rh′	Rh″	Rh_0		Rh′	Rh″	Rh_0
rh	Neg.	Neg.	Neg.	rh_0	Neg.	Neg.	Pos.
Rh″	Pos.	Neg.	Neg.	Rh_1 (Rh_0′)	Pos.	Neg.	Pos.
Rh″	Neg.	Pos.	Neg.	Rh_2 (Rh_0″)	Neg.	Pos.	Pos.
Rh′Rh″	Pos.	Pos.	Neg.	Rh_1Rh_2	Pos.	Pos.	Pos.

TABLE II.—*Classification of Rh Blood Types and Subtypes*

Rh Blood Types	Reactions with Sera			Genotypes	Reactions with Sera		Rh Subtypes	Approximate Distribution (% among Caucasians in New York City)	
	Anti-Rh′	Anti-Rh″	Anti-Rh_0		Anti-Hr′	Anti-Hr″			
rh	Neg.	Neg.	Neg.	rr	Pos.	Pos.		13·0	
Rh′	Pos.	Neg.	Neg.	$R'R'$	Neg.	Pos.	Rh′Rh′	0·01	1·0
				$R'r$	Pos.	Pos.	Rh′rh	1·00	
Rh″	Neg.	Pos.	Neg.	$R''R''$	Pos.	Neg.	Rh″Rh″	0·005	0·5
				$R''r$	Pos.	Pos.	Rh″rh	0·5	
Rh′Rh″	Pos.	Pos.	Neg.	$R'R''$	Pos.	Pos.		0·01	
Rh_0	Neg.	Neg.	Pos.	r^0r^0	Pos.	Pos.		2·0	
				r^0r					
Rh_1 (Rh_0')	Pos.	Neg.	Pos.	R^1R^1	Neg.	Pos.	Rh_1Rh_1	20·0	54·0
				R^1R'					
				R^1r	Pos.	Pos.	Rh_1rh	34·0	
				R^1r^0					
				$R'r^0$					
Rh_2 (Rh_0'')	Neg.	Pos.	Pos.	R^2R^2	Pos.	Neg.	Rh_2Rh_2	3·0	15·0
				R^2R''					
				R^2r	Pos.	Pos.	Rh_2rh	12·0	
				$R''r^0$					
Rh_1Rh_2	Pos.	Pos.	Pos.	R^1R^2	Pos.	Pos.		14·5	
				$R'R^2$					
				R^1R''					

which speaks for itself and has been reproduced several times in papers by me, the designations of the antisera which I use are far from arbitrary. The name "anti-Rh_0" was not selected arbitrarily but to indicate the special position serologically and genetically of the factor Rh_0 to factors Rh′ and Rh″. This is entirely lost sight of in Fisher's C–D–E nomenclature. The designations Rh′ and Rh″ were selected to indicate that these are on an equal plane, because when anti-Rh_0 is ignored a scheme of four types results (disregarding the very rare *Rh*$_z$ gene), which is analogous serologically and genetically to the scheme of the four blood groups O, A, B, and AB. Thus Rh_1 is merely an abbreviated designation for Rh_0'; Rh_2 is short for Rh_0''; and Rh_z is short for Rh_0''', so there is no inconsistency in the use of the name anti-Rh_0. The adoption of the abbreviated symbols Rh_1, Rh_2, and Rh_z was decided upon in conformity with the principle of simplicity without ambiguity enunciated above. For beginners for whom these brief designations are too difficult the alternative complete designations Rh_0', Rh_0'', and Rh_0''' are recommended, but these names are hardly necessary for practised workers in the field, who uniformly prefer the simpler designations.

In line with the ideas presented above concerning any additions to the nomenclature to keep abreast of advances in the field, I have made[7] certain additional minor but important changes in my own nomenclature in order to take into account the reactions of the anti-Hr′ and anti-Hr″ sera, and these are presented in Table II. In this connexion the statement made by Race *et al.*[8] in a previous letter to *Nature*, with regard to the so-called antibodies anti-Hr of Levine and anti-St of Race and Taylor, that "Wiener, however, has categorically stated that they are the same antibody," also carries an erroneous implication that my conclusion was unfounded. As a matter of fact, my statement was based on substantial evidence,[9 10] and the subsequent course of events proved my contention to be correct, while the conclusion of Race *et al.*, that Levine's anti-Hr was actually the same as anti-Hr_0, was shown to be wrong. To date no serum has been encountered giving reactions corresponding to anti-Hr_0 (Fisher's δ), and in line with the principle to include in the nomenclature only the *known facts*, the reactions of this hypothetical serum have been omitted from Table II. The nomenclature now proposed forms a unified system which provides simple and unambiguous names for the agglutinogens, genes, phenotypes, and genotypes.

While Fisher's designations form a logical and unified system like my own, they have the disadvantage that they introduce three letters, C–D–E, together with corresponding Greek symbols, which are entirely foreign to the scheme of the Rh blood types; and, besides, the designations of the genes and genotypes are much more complicated, as shown by the following table of comparative symbols for the known Rh genes.

Designations of Genes

Wiener	Fisher
r	cde
R'	Cde
R''	cdE
r^0	cDe
R^1	CDe
R^2	cDE

In using my notations it is not necessary to employ the expressions "large R" or "small R," because the qualifying superscripts prevent any ambiguity; with Fisher's names, on the other hand, it is necessary to specify when a capital or small letter is used, so that his nomenclature is awkward to use orally. Moreover, the names of the phenotypes and genotypes become so complicated with the Fisher nomenclature that he finds it necessary to resort to the use of my symbols in this connexion, and a curious hybrid nomenclature results. My own symbols for the agglutinogens, genes, etc., are self-explanatory and do not require the prop provided by a duplicate nomenclature.

The main basis for Fisher's nomenclature is his theory of closely linked genes. In general Fisher's theory bears about the same relation to my theory as Furuhata's theory bears to Bernstein's theory of the four blood groups.[11] While ample evidence has accumulated already to support my own theory[12 13 14] of multiple allelic Rh genes, no substantial evidence has been put forth in support of Fisher's theory. If the complex nature of the Rh agglutinogen is due to the action of linked genes, then this would be a unique case in genetic history; my own interpretation that the complexity of the antigens represents a multiple effect of single genes is more in conformity with past experience in genetics and knowledge in serology. To carry Fisher's theory to a logical extreme, it would be necessary to postulate linked genes for the partial antigens B_i, B_{ii}, B_{iii}, etc., in human group B blood, and for the partial antigens A, A_1, and F_A in human blood of subgroup A_1. Furuhata's theory has not found favour because it accomplishes nothing that is not accomplished by the simpler Bernstein theory of multiple allelic genes, and the future will soon show whether Fisher's theory is destined to a similar fate.

One of the arguments advanced by Fisher is that he predicted the existence of antisera Hr″ (η) and Hr_0 (δ) and of genes R^y and R^z. As a matter of fact such predictions follow just as naturally from my own theory (cf. Table II), and in addition anti-Hr_0 and R^y have not yet turned up and possibly may not even exist. On the other hand, Fisher's theory makes no provision for the very real and important intermediate genes described by me[15 16] as occurring particularly among negroes.

The use of the symbols C–c, and D–d, and E–e in Fisher's scheme implies that Rh′, for example, is dominant over Hr′. Actually the Rh and Hr factors are related to each other as M is to N, and neither is dominant over the other, so my own Rh–Hr nomenclature is more appropriate and less misleading.

Fisher's system is much more difficult to learn, and he himself must have recourse to the gene symbols devised by me. Therefore, workers using his nomenclature have to learn two systems of symbols which are unrelated to one another, while workers using my system have only to remember that Rh_1 is short for Rh_0' and Rh_2 is short for Rh_0''.

Under his theory of three tightly linked loci Fisher postulates that genes r^o, R', and R'' arose by rare crossing-over. In support of this argument he points out that his observed frequency for gene r^o (3.0%) is not much different from the sum of frequencies of genes R' (0.8%) and R'' (1.7%). He

also states that the relative frequency of gene R'' to gene R_2 as compared with R' to R^1 indicates that his mythical gene locus c lies between d and e. However, these statements are based entirely on the findings in England and disregard the findings in other countries. In America, for example, the relative frequency of R' to R'' is reversed, while in negroes the frequency of r^o (42.1%) is quite different from the sum of R' (2.7%) and R'' (none found).[17] As a result Fisher's theory leads to a contradiction. In my opinion a much more plausible explanation is that the genes r^o, R', and R'' arose by mutation. Thus the high frequency of gene r^o and of the intermediate R genes, as well as the intermediate gene $A_{1,2}$, suggests that the peculiar distribution among negroes is due to a higher mutation rate in this race.

The argument that the discovery of the so-called c^w factor[18] supports Fisher's theory does not seem correct, because this factor appears to have the characteristic predicted by me[15] for factor Rh'''.

In this connexion I should like to point to a recent attempt[19] to develop an elaborate theory of inheritance of the four blood groups by means of four gene couplets. On the basis of this theory, Myslivec derives formulae for the gene frequencies involving the square root of the difference 0−2 AB. Since populations exist in this world where the frequency of group O is less than twice the frequency of group AB, the theory leads to an obvious contradiction.

In conclusion I should like to take this opportunity to answer the rather academic attack[20] on my use[21] of the term "conglutination" in connexion with the Rh antibody reactions. Recent findings[22] have all sought to justify my use of this term. The term "co-agglutination," used by other workers, applies to a phenomenon obviously identical with mixed agglutination, and one would expect this to occur in conglutination where the second stage is non-specific.[23] In agglutination, involving bivalent antibodies, where the second stage is specific, co-agglutination or mixed agglutination does not occur. My new ideas and findings concerning univalent (blocking antibodies or glutinins) and bivalent antibodies (agglutinins) have led me to the theory[24 25] that erythroblastosis foetalis actually comprises three separate entities instead of a single disease. According to my proposed nomenclature, these three entities are as follows: (1) Congenital haemolytic disease (with anaemia and hydrops), usually due to univalent Rh antibodies; (2) icterus gravis with kernicterus, usually due to bivalent Rh antibodies; and (3) icterus praecox (formerly confused with "physiologic" icterus, usually due to A–B sensitization. Further details will be given in papers now in the press and in preparation.

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From a world starved of all types of scientific and surgical equipment by six years of war, inquiries and orders are pouring into Britain for products in this field. To cope with this new demand, a group of leading manufacturers announce the formation of a new company, "SCIEX" (Scientific Exports (Great Britain) Ltd.), with offices at Buckingham House, Buckingham Street, London, W.C.2. Their plans include group selling in oversea markets by a wide development of the existing agency organization of individual members. New agents are also being appointed in territories where member companies had no previous export business.

THE Rh FACTOR AND HEPATOMEGALY AND SPLENOMEGALY IN CHILDREN AND ADOLESCENTS

BY

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Infants affected with congenital haemolytic disease may sustain damage to liver or spleen, or both, as manifested by jaundice and hepatomegaly, or splenomegaly, during early infancy. It seemed, therefore, of interest to apply Rh factor investigations in families in which there were children or adolescents suffering from enlargement of liver or spleen, on the ground that the aforementioned damage might become manifest in childhood by enlargement of these organs. Accordingly, three families were investigated and data concerning them are given below. The affected children were referred for diagnosis to the paediatric department of the Cardiff Royal Infirmary. Rh factor investigations were carried out in the laboratory of the Welsh Regional Transfusion Service. In two of the three families rhesus-immunization of the mothers was proved, but in the third family this was definitely excluded. The method of proof was the biological test, as the usual *in vitro* tests failed to reveal Rh iso-antibodies in the sera of the mothers. These cases are of much interest, since the affected children had enlargement of the liver or spleen, and such diagnoses as von Gierke's disease (glycogen disease), Gaucher's splenomegaly, Banti's disease, familial cirrhosis of the liver, etc., had been considered from time to time. Before giving an account of the families and investigations, the biological test may here be reviewed.

Oehlecker (1921, 1924) originally devised the biological test to determine whether blood was compatible for transfusion. The test was the rapid intravenous injection of 20 ml. of the proposed donor's blood, and a further similar quantity if after an interval of several minutes there were no symptoms. If the second injection caused no symptoms the donor's blood was regarded as compatible and its transfusion proceeded with. The donor's blood was considered incompatible if symptoms such as tingling, chill, nausea, etc., were caused by the small trial injection. This test, however, is not entirely reliable, because transfusion of incompatible blood may cause no symptoms (Drummond, 1944). Oehlecker's test, which in effect is simply a trial transfusion of blood, was subsequently adapted by Wiener, Wexler, and Gamrin (1944) for determining whether a particular individual had been previously sensitized to the Rh factor. It was known that *in vitro* tests might fail to demonstrate Rh agglutinins or blocking antibody in the sera of a small percentage of Rh-negative mothers who had had erythroblastotic infants, and in such cases the biological test was successfully used to demonstrate previous rhesus-immunization of the mother.

The biological test (see Wiener, Silverman, and Aronson, 1942) is carried out as follows: The mother to be investigated for previous immunization to the Rh factor is transfused with 50 ml. of fresh blood from a known Rh-positive donor. The ideal donor is the husband. The red cells of the donor must be compatible in the A–B–O system with the recipient's serum. Immediately before transfusion a 10-ml. sample of venous blood is taken from the mother with a clean, dry sterile syringe and divided between two tubes, one dry and the other containing 1 ml. of sodium citrate solution. One hour after the transfusion a further 10 ml. of the recipient's venous blood is taken and treated in the same way as the first sample. The serum and plasma of the pre- and post-transfusion samples of the recipient's blood are then compared. If the donor's blood is compatible the pre- and post-transfusion samples of the recipient's serum and plasma will be of the same colour—usually a pale straw colour. Hyperbilirubinaemia in the post-transfusion serum sample, along with its absence from the pre-transfusion serum sample, indicates that the donor's red cells are incompatible and have undergone rapid destruction in the recipient. When the biological test is positive the transfusion is usually, but not always, complicated by a febrile reaction with chill, rigor, etc. A cross-matching test by a reliable tube technique before transfusion should,

of course, have shown the donor's red cells to be compatible with the recipient's serum; it is a positive biological test which demonstrates the incompatibility. It has been pointed out by Mollison (1943) that even though an Rh-negative woman has, many years previously, been immunized to the Rh factor by bearing an Rh-positive foetus, and the Rh antibodies have long since disappeared from her serum, yet transfusion of Rh-positive blood will rapidly evoke the Rh agglutinins, with consequent haemolysis of the donor's blood.

Case Report: First Family

Mrs. M., aged 47, had never had a blood transfusion and has had the following pregnancies:—First: 1923, male (Ll.); no history of jaundice—further data below. Second: 1925, female (Els.); normal. Third: 1927, male (Rbt.); no history of jaundice—further data below. Fourth: 1930, male (On.); normal. Fifth: 1933, female (Jy.); slight jaundice soon after birth, which persisted three days. Sixth: 1936, male (Gd.); died intensely jaundiced, aged 3 days. Seventh: 1939, male (Gl.); apparently normal. Eighth: 1940, female (Jan.); moderately jaundiced for a few days after birth; now apparently normal.

The first child (Ll.) weighed 9 lb. (4.08 kg.) at birth. When 3 years old he underwent inguinal herniotomy. His abdomen has always been large, and he did not walk until 3 years old. He was stated to be a trifle slow mentally, though he attended an ordinary school. He occasionally had loose pale stools. The third child (Rbt.) weighed 8½ lb. (3.85 kg.) at birth and had a similar history, including operation for hernia. Neither of these boys was ever jaundiced.

Both boys were referred for diagnosis in December, 1936, because of much-enlarged bellies since birth. The first (Ll.) was at this time 13 years old and was slightly stunted in growth: height 4 ft. 3½ in. (131 cm.) (normal for age, 4 ft. 10 in. or 147 cm.); weight, 5 st. 5 lb. (34 kg.) (normal for age, 6 st. or 38 kg.). When standing his abdomen was protuberant and there was slight genu valgum (Fig. 1). Some telangiectases were present on the limbs and face.

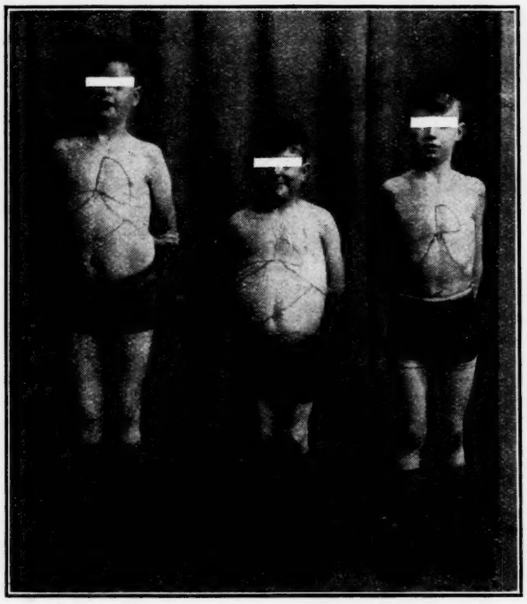

FIG. 1.—First family. Left to right: First child (Ll.) and third child (Rbt.), with liver areas mapped out. The boy standing on the right is the fourth child (On.), who was apparently normal.

The liver was grossly enlarged, its lower border being down to the level of the umbilicus, and smooth and firm on palpation. Spleen not palpable. Mentally he seemed normal, but the I.Q. was not estimated. The condition of the third child (Rbt.), then aged 9 years, was similar to that of Ll. but his liver was much larger, for its lower border was felt well below the umbilicus. The spleen was just palpable, and there was a well-marked genu valgum (Fig. 1). There was some degree of infantilism, his height being 3 ft. 7¼ in. (111 cm.) (normal for age, 4 ft. 2 in. or 127 cm.) and weight 3 st. 10 lb. (23.6 kg.) (normal for age, 4 st. 2 lb. or 26.3 kg.). The parents were healthy, and the second, fourth, and fifth children (then aged respectively 11, 7, and 3 years) were normal, while the remaining sixth child had died, intensely jaundiced, when aged 3 days.

The Wassermann reactions of the parents and Ll. and Rbt. were negative. In both boys the red cells showed slight decreased fragility. The blood-sugar curve was normal in the case of Ll., but there was some delay in return to normal in the case of Rbt. A laevulose-tolerance test on Ll. was normal. In both boys the van den Bergh test was negative. Each boy had a Hb of 74%; neither had a leucopenia. At this time (December, 1936) a diagnosis of familial cirrhosis of the liver was made. The other children were reported as normal at this time, and had no liver or splenic enlargement. Nothing further was heard of these two boys until 1945, when it was decided to apply Rh factor investigations. Ll. was examined in January, 1946; he was then of about average height, and his liver and spleen were no longer palpable. It will be noted that since the examination of the first and third children, in 1936, two further children (seventh and eighth, both Rh-positive) were born, the last of which had jaundice and recovered, whilst the other was apparently normal.

Rh Factor Investigations (July, 1945).—The mother was group O (IV) Rh-negative, and her serum contained neither Rh agglutinins nor blocking antibody. The Diamond-Abelson (1945) slide test was negative. Wiener's (1945) so-called conglutination test was difficult to interpret because of rouleaux formation, but the reaction was in all probability negative. The father was group B Rh+ (heterozygous). The children's groups were: Ll., O Rh+; Els., B Rh+; Rbt., B Rh+; On., B Rh+; Jy., O Rh-negative; Gl., O Rh+; Jn., O Rh+. On Jan. 14, 1946, the biological test was performed. The donor was Ll., the first child (group O Rh+). The father could not be the donor, as he was group B. The donor's red cells were compatible with the recipient's serum, and vice versa. Fifty ml. of the donor's blood was taken into 350 ml. of sodium citrate solution and at once transfused. The recipient, of phlegmatic temperament, became restless, anxious, and flushed when about half the blood had been transfused. Transfusion was completed in 30 minutes. The temperature was normal throughout, but an hour after transfusion it rose to 100.2° F. (37.9° C.). Thirty minutes after transfusion the recipient had a moderately severe rigor lasting 20 minutes. After five hours the patient's condition was normal. The pre-transfusion samples of the recipient's serum were a pale straw colour, but post-transfusion samples taken 1½ hours and 2½ hours after transfusion were deeply icteric. A catheter sample of urine collected an hour after transfusion was orange-coloured; there were no casts. A sample of the recipient's serum was collected on the 18th day after transfusion; it contained Rh agglutinins (anti-D) of titre 1/16. The Coombs *et al.* (1945a, 1945b) anti-human-globulin test, using a pre-transfusion sample of the mother's serum, gave a negative reaction.

Case Report: Second Family

Mrs. I., aged 42, had never had a blood transfusion and has had the following pregnancies:—First: 1934, male (Wm.); normal. Second: 1937, male; died of pertussis aged 5 weeks. Third: 1939, female (Pt.); full-term and normal at birth; no jaundice—further data below. Fourth: 1940, female; stillbirth at full term, but foetus was alive one week before delivery. Fifth: 1941, female; stillbirth at 28th week. Sixth: 1943, male; stillbirth at 26th week.

The third child (Pt.) was first seen in June, 1945, because of herpes zoster. Two years previously a school medical officer noted that she had an enlarged spleen. Apparently the child was not jaundiced at birth, nor at any time subsequently, but her abdomen had always been noticeably enlarged. Examination (in 1945) revealed a considerably enlarged spleen extending almost to the umbilicus. The liver also was enlarged, its lower border being 3 in. (7.6 cm.) below the costal margin (Fig. 2). The patient was a trifle undersized for her age. The haemoglobin was 76% and leucocytes 6,400. Fragility of red cells, normal. A tentative diagnosis of Banti's syndrome with cirrhosis of the liver was made. In January, 1946, the condition of the spleen and liver was unaltered. The parents are healthy, and the mother's Wassermann reaction is negative.

Rh Factor Investigations (July, 1945).—Mother, group O Rh-negative; no Rh agglutinins or blocking antibody detected in her serum. The third child (Pt.) was O Rh+, and her cells were not agglutinated by her mother's serum. Husband, O Rh+. First child (Wm.), O Rh+. The Diamond-Abelson (1945) slide test was negative, but the so-called conglutination test of Wiener (1945) gave a positive reaction.

It was decided to obtain more certain evidence of rhesus-immunization of the mother by applying the biological test. The husband of Mrs. I. was not available (being abroad), so a group O R_1R_2 donor was used (in case the mother was immunized to either the R_1 or the R_2 antigen). On Dec. 11, 1945, 50 ml. of the donor's blood was taken into 350 ml. of sodium citrate solution and at once transfused into the mother. Preliminary cross-matching tests showed that the donor's cells were compatible with the recipient's serum. Transfusion was given slowly over one hour because the recipient soon became restless and alarmed and experienced tingling sensations, throbbing in the head, nausea, vomiting, and pain in the lumbar

region. The reaction was fairly severe, and included rigor and rise of temperature from normal to 102° F. (38.95° C.). Samples of the recipient's serum collected one hour and four hours after the transfusion were markedly icteric compared with the pre-transfusion serum sample. A catheter sample of urine taken before transfusion was water-clear, but a similar sample taken one hour after transfusion was orange-amber in colour; no urinary casts were found.

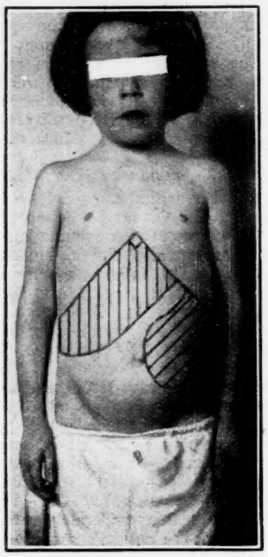

FIG. 2.—Second family. Third child (Pt.). Area of liver and spleen mapped out.

On the ninth day after the biological test strong Rh agglutinins of titre 1/64 (anti-D) were found in the recipient's serum. Finally, in January, 1946, the Coombs anti-human-globulin test was carried out on a pre-transfusion sample of the recipient's serum, and a positive reaction was obtained.

Case Report: Third Family

Mrs. L., aged 42, had never had a blood transfusion. She has a cleft palate, and has had the following pregnancies:—First: 1930, female, one month premature; moderately jaundiced for two weeks and died of pneumonia aged 16 months. Second: 1932; abortion at seventh week. Third: 1933, twins; one was of undetermined sex and died soon after birth; the other, a female, had convulsions and died, intensely jaundiced, on the eighth day. Fourth: 1935, male (Ml.); two weeks premature; never jaundiced; surviving and normal. Fifth: 1938, female (Jl.); became moderately jaundiced a day or two after birth, and jaundice persisted three months. Enlargement of liver detected when the child was a month old.

The fifth child (Jl.) has been under observation intermittently since infancy for hepatomegaly and splenomegaly. In December, 1945, her abdomen was very protuberant. The spleen was much enlarged and extended 3 in. (7.6 cm.) medially from beneath the left costal margin. The lower border of the liver was palpable two fingerbreadths below the right costal margin. In recent months epistaxes have occurred. A blood examination revealed slight secondary anaemia and a leucopenia. The child was intelligent and of about normal size. The mother's Wassermann reaction is negative. The clinical diagnosis was considered to be Banti's disease or splenic anaemia.

Rh Factor Investigations.—Mother, A_1 Rh+ (R_1R''), and no irregular antibodies detected in her serum. Husband, O Rh+ (R_1r). Ml. (fourth child), A_1 Rh+ ($R''r$). Jl. (fifth child), A_1 Rh+ (R_1R_1). Wiener's conglutination test was negative. The Coombs anti-human-globulin test, using the red cells of the children, was negative. The biological test, using the husband as donor, gave a negative reaction. Subsequent to the biological test no irregular agglutinins appeared in the mother's serum. There was therefore no evidence of iso-immunization of the mother to an antigen in the red cells of her foetuses.

Discussion

In some infants affected with congenital haemolytic disease, when Rh agglutinins or an incomplete antibody has been demonstrated in the maternal serum, we have observed liver or splenic enlargement, or both, in addition to jaundice. Occasionally such enlargement of liver or spleen persisted for several weeks after jaundice had disappeared. Other investigators—for instance, Wiener and Wexler (1943), Wiener (1944), Wiener, Wexler, and Gamrin (1944), and Langley and Stratton (1944)—have also observed jaundice, hepatomegaly, and splenomegaly in newborn infants affected with haemolytic disease. The relationship between neonatal jaundice and liver damage and the Rh factor has recently been dealt with by Skelton and Tovey (1945).

There are not, apparently, any reports on Rh factor investigations in families in which there were older children or adolescents with liver or splenic enlargement. Since previous rhesus-immunization of the mothers was clearly proved in the first and second families in this report, it is possible that the hepatomegaly and splenomegaly in these children is a late manifestation of damage caused by the noxious action of Rh iso-antibodies. In this connexion it is to be noted that Rh group-specific substances have been demonstrated in the liver, spleen, kidney, etc., by Boorman and Dodd (1943). Cappell (1944) states: "The severity of foetal liver damage in some cases of haemolytic disease is an indication that harmful effects are by no means confined to the blood and haemopoietic organs."

If damage by Rh iso-antibodies was the cause of the liver and splenic enlargement in the affected children of the first and second families, it then becomes intriguing to know why, in the first family, the second, fourth, and seventh children, who were all Rh-positive, were not affected with jaundice, hepatomegaly, or splenomegaly, whereas the sixth infant died jaundiced and the eighth had a moderate degree of jaundice but recovered spontaneously. The Rh-negative child in family No. 1 has always been normal. That the first child in family No. 2 was not affected, although Rh-positive, is understandable, for it is well known that in haemolytic disease the firstborn is frequently unaffected. However, since rhesus-immunization of the mothers was proved in the first two families, it seems likely that congenital haemolytic disease was the cause of the liver and splenic enlargement. The cases of the children affected with splenomegaly and hepatomegaly in the first two families are unusual in that jaundice apparently never occurred. It is, however, well known that some infants affected with congenital haemolytic disease may be profoundly anaemic though never jaundiced. On the other hand, in the third family the affected child was jaundiced for several weeks, but the possibility of rhesus-immunization of the mother was definitely excluded.

Familial cirrhosis of the liver has long been recognized clinically, and our findings in the first family suggest that in such cases Rh factor investigations are essential in a search for the true cause. It would also seem, from our findings in the second and third families, that Rh factor investigations should be applied in cases diagnosed clinically as Banti's disease or splenic anaemia in children. Liver and splenic enlargement in children may, apparently, in some cases be attributable to congenital haemolytic disease, and, if this is so, Rh factor investigations are essential in the differential diagnosis of unexplained forms of hepatomegaly and splenomegaly occurring in children or adolescents.

We wish to thank Dr. T. R. Davies, Dr. G. S. Lewis, and Dr. F. Pearson for their co-operation in securing the investigation of the families reported in this paper. We desire also to thank Dr. R. R. Race of the M.R.C. Serum Unit, Cambridge, for carrying out Rh genotyping and the Coombs test in the third family, and for supplying rabbit sera for the Coombs test in the first two families.

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TUBERCULOSIS IN SERVICE MEN: PRELIMINARY REPORT

BY

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So much has been said on the subject of tuberculosis that it is almost impossible to write anything new, except about the specific drug that remains to be discovered. But while I was analysing the Service cases of this war, nearly 3,000 of which have passed through the tuberculosis section of this hospital, I felt that there was ample room for rearrangement of emphasis on different factors of this disease within the framework of what is already known.

Tuberculosis is still one of the major causes of death and disablement among young people in this country, but it is doubtful if in any other disease so many avoidable and grievous mistakes are made. It would be futile to blame the M.O.s and general practitioners for these lapses. The teaching of this disease in most of our general and teaching hospitals is very inadequate. It is astonishing that a state of affairs should be allowed to exist in which tuberculosis services are almost completely dissociated from the general hospitals. After all, it is through these general hospitals that most of our young doctors pass into practice. Osler's fear that tuberculosis will become an overspecialized subject has come true. It is important to realize that specialists, with all their knowledge, are powerless to help the patients unless the M.O.s and general practitioners can recognize the disease in time, and refer the cases to them.

I hope to publish a full and detailed analysis of these cases in the near future, but here I will try to give, as a preliminary report, only the broad conclusions which have emerged from the analysis.

More Important Groups of Presenting Symptoms

1. *No Symptoms.*—The person feels quite fit and does his normal Service duties without any apparent ill effect. Routine or incidental *x*-ray examination reveals pulmonary tuberculosis. It is worth noting that cases with fairly extensive disease may be found in this group.

2. *Vague Symptoms.*—A large number of patients belong to this group. Feeling "out of sorts," general malaise and lassitude, lack of concentration and interest in their jobs, etc., are the common symptoms. These may be persistent or periodic.

3. *More Definite Symptoms.*—Cough with or without sputum, loss of weight, night sweats, pleuritic pain, and dyspnoea are some of the common symptoms in this group.

4. *Haemoptysis.*

5. *Gastric Symptoms.*—Symptoms simulate gastritis and/or peptic ulcer. Pulmonary tuberculosis is diagnosed when preliminary screening of chest is done before a barium meal test.

6. *Influenzal Symptoms.*—In a certain number of cases the presenting symptoms may be indistinguishable from those of influenza and very often they are diagnosed as such. At a future date, when tuberculosis is recognized, it is said that the attack of influenza "flared up" a latent lesion. It is more true to say that influenza was wrongly diagnosed and that those symptoms were the expression of the tuberculous pathological process itself. It may be further said that it is unusual for true attacks of influenza in a tuberculous person to flare up the disease if the proper precautions are taken.

Diagnosis

For the purpose of diagnosis, reliance on physical signs may be so misleading as to be almost dangerous. It is surprising what a large number of these Service patients, who reported sick with definite symptoms such as persistent cough, expectoration, loss of weight, general lassitude, and in some cases even haemoptysis, were given "medicine and duty" because physical examination of the chest was negative. Despite persistent symptoms, skiagrams were not advised for the same reason—viz., absence of physical signs. The effect of such an attitude on the early diagnosis of tuberculosis is obvious. Here again it will be wrong to blame the M.O.s. For generations the importance of physical signs in chest diseases has been drummed into us, and it has been copied from edition to edition of textbooks.

To-day, when *x*-ray films have shown the inadequacy of physical signs over and over again, we are loath to accord to physical examination second place, as if to do so would be to renounce the supremacy of man over machine.

The physical sign in its proper perspective is of great value, but careful analysis and evaluation of a good history should be the basis of every diagnosis. If history and symptomatology, however remotely, suggest tuberculosis the case must be *x*-rayed. It should not be loosely labelled as "idiopathic," "functional," "bronchitis," "influenza," etc., without proper investigation. In a doubtful case it is better to err on the side of "too many" rather than "too few" skiagrams.

Treatment

1. Rest is still the most important measure in the treatment of tuberculosis.

2. Collapse therapy is only ancillary and never a substitute for rest. I know of a few instances in which the patient was allowed to go home on the same day as, or within two to three weeks of, induction of an artificial pneumothorax. This practice is fraught with danger and has little to recommend it.

3. In the acute exudative type of lesion a preliminary period of bed rest should precede any attempt at artificial pneumothorax. In suitable cases phrenic crush and/or artificial pneumoperitoneum may with advantage be considered during this period of rest.

4. When radiologically the lesion is close to the hilum it is advisable to carry out bronchoscopy before inducing an artificial pneumothorax. In this type of case a main bronchus is very often involved, in which event artificial pneumothorax is contraindicated.

5. In certain cases it is justifiable to continue an artificial pneumothorax for a limited period of time even when the artificial pneumothorax is unsatisfactory in the commonly accepted sense of the word. Needless to say, these cases need very careful handling, and should be done only by those "who know what they are doing."

6. Abandonment of artificial pneumothorax should always be gradual.

7. Artificial pneumoperitoneum has a greater scope than is accorded to it to-day.

It is interesting to note that collapse of the lung, varying from small areas to whole lobes, occurs far more frequently in tuberculosis, especially in association with artificial pneumothorax, than is generally realized. There appears to be a high correlation between collapse and fluid formation in the case of artificial pneumothorax.

The Age Factor in Assessment

The importance of age in assessing a case of tuberculosis is very often overlooked. It is not fully appreciated that a radiological lesion in a person 20 years old has a very different significance from a similar one in a person of 40. In a patient under the age of 25–27 years a tuberculous lesion, however innocuous it may appear on clinical and radiological examination, should never be declared inactive unless the patient has been under close observation for a fairly long time, during which period his exercise tolerance has been satisfactory. Even then it is desirable for him to have a radiological examination from time to time.

Rehabilitation

There is no other disease for which the statement "you treat the person and not the disease" is more true. Hence for proper management of a tuberculous case not only do you need the full clinical data, but due note must be accorded to the sociological and temperamental aspects of the patient. The importance of rehabilitation in the treatment of tuberculosis cannot be overestimated. During this period the patient is gradually hardened off through occupational therapy and sheltered employment under medical supervision. Moreover, in the present state of our knowledge, by this method alone is it possible to judge what sort of life he will be able to lead outside. Furthermore, the patients themselves learn what they can and what they cannot do.

Strict exercises—viz., measured walks, etc.—are of great value in the beginning, but these are too artificial when compared

with the ordinary routine of life. Whenever possible they should be followed up by observing the patient while he works and lives under conditions approximating to those prevailing outside the sanatorium.

Conclusion

If the history, however remotely, suggests tuberculosis the patient must be *x*-rayed.

If the patient is below the age of 25–27 no lesion should be declared inactive unless he has been under observation for a period of time. During this period his clinical examination, skiagrams, and exercise tolerance should be satisfactory.

There must be close co-ordination between general hospitals and tuberculosis services.

My thanks are due to Dr. F. R. G. Heaf, Hon. Medical Director, for his help and kind permission to analyse these cases.

Medical Memoranda

Amoeboma of the Hepatic Flexure

The following case illustrates the importance of keeping amoebiasis in mind in the Tropics and of carrying out a sigmoidoscopy even when stools are entirely negative.

CASE RECORD

A well-nourished Gurkha sepoy aged 23 was admitted to hospital on Dec. 14, 1945, having complained of pain in the right chest and hypochondrium with an evening pyrexia for three weeks. There was no history of previous ill-health, the patient being questioned particularly regarding bowel disorders.

On examination a few rhonchi were found at the right base, and in the right hypochondrium a rounded swelling, 3½ in. (8.9 cm.) in diameter; it was rather hard, not fluctuant, not hot, slightly resonant, and tender but not exceedingly so. It appeared not to be continuous with the liver, and to be attached to the rectus abdominis. The stools contained no blood or mucus on naked-eye inspection, and were repeatedly negative for exudate, cysts, and ova. The white cells numbered 14,000 per c.mm., of which 80% were polymorphs. The urine was normal. By Dec. 18 the swelling was becoming more definitely adherent to the abdominal wall, and indeed appeared to be an abscess within the wall about to involve the skin. Sigmoidoscopy showed many patches of ulceration typical of amoebic infection; unfortunately no scraping was taken.

The radiological report on the 19th was as follows: "*Straight skiagrams in upright and right decubitus positions:*—Multiple fluid levels in the small and large intestines proximal to hepatic flexure. *Barium enema*:—Screening; passage of enema normal up to proximal end of transverse colon, which became distended as the enema proceeded. The patient had a desire to return the enema, and some escaped around the nozzle. After a delay of several seconds a narrowed stream of barium passed onwards into the ascending colon and caecum. The appearances suggested a constriction 2½ in. (6.3 cm.) long and about 1/6 in. (0.4 cm.) in width. The site of constriction corresponded with the site of the tumour and of tenderness. *First skiagram after enema*:—Gut filled from caecum to rectum; haustrations normal; hepatic flexure ill-defined, proximal end of transverse colon showing an abrupt ending. *Skiagram after evacuation*:—No change in amount or density of barium shadow in caecum and ascending colon; rest of large intestine partly emptied. *Skiagram of lateral view in supine position*:—No barium shadow extending anteriorly into region of tumour. *Conclusion*: Appearances suggestive of chronic obstruction at or near hepatic flexure."

A diagnosis of amoeboma involving the tissues of the anterior abdominal wall was made, and on Dec. 19 emetine (1 gr.—65 mg.—daily × 6) and penicillin (100,000 units daily × 8) were started. A dramatic reduction in size and tenderness of the swelling resulted: on the 9th day of treatment it was only the size of a hazel nut, and was hard and free from tenderness. The total white cells had fallen to 11,400 per c.mm. After three days' rest a further 4 gr. (0.25 g.) of emetine was given, together with a course of chiniofon retention enemas. The patient was afebrile throughout his stay in hospital except for a rise to 100° F. (37.8° C.) on Dec. 18.

On Jan. 14, 1946, the radiologist reported: "*Barium enema*:—Filling of whole of large intestine now normal. No evidence of any intestinal lesion or spasm." Sigmoidoscopy on Feb. 2 showed a normal mucosa except for a very few minute flat-topped "warts" characteristic of healing pin-point craters. Nothing abnormal could be palpated in the abdomen.

In this case the criteria of amoebic stenosis as distinct from carcinomatous stenosis were fairly well fulfilled, the narrowing being of considerable length and width.

I desire to express my thanks to Lieut.-Col. H. R. S. Harley, I.A.M.C., surgical specialist, and to Lieut.-Col. R. Heathcote, I.A.M.C., radiologist, for their great interest in this case; and to Lieut.-Col. H. M. Salamat Ullah, *M.C.*, I.A.M.C., for permission to publish this report.

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Reviews

CLINICAL NEUROLOGY

Introduction to Clinical Neurology. By Gordon Holmes, M.D., F.R.S. (Pp. 183; illustrated. 12s. 6d., plus 6d. postage.) Edinburgh: E. and S. Livingstone. 1946.

The contributions to the literature of their subject which we owe to great clinicians fall easily into two categories. There are those papers and communications in which they place on record their original contributions to knowledge, and there are the textbooks and monographs in which they present to the general body of their professional brethren the sum of their experience, in a part or over the whole of their own field, and thus take their due place as teachers. Gowers, one of the master builders of modern clinical neurology, wrote numerous monographs and one great textbook, in them displaying the intimate familiarity with his material which is the foundation of that clinical wisdom in which he was so pre-eminent. Of original papers in the strict sense his sum was relatively small. Dr. Gordon Holmes, a one-time pupil and now a worthy successor of Gowers, can claim a long and distinguished bibliography of original contributions to neuropathology and clinical neurology, but hitherto he has not summed up his experience in a book or monograph for the benefit of those who have not had the privilege of following his teaching by the bedside and in the out-patient clinic. There can be few neurologists of the present time who have not listened to this teaching in the wards at Queen Square, but to those who have as well as to those who have not, this "Introduction" will be welcome.

Often believed to be the most complex field of medicine, assuredly one in which the British school of medicine has been pre-eminent, neurology is certainly one calling for logical and sustained thinking and, at least in its higher reaches, for a sound basis of anatomy and physiology. It is thus an excellent training discipline for anyone who wishes to graduate into medical science with a view to teaching and research, or even to teaching alone, in any branch of medicine. Therefore this "Introduction" should prove of value to a wide circle of readers, for it is in fact an introduction to the clinical method in its most rigorous aspect. It is not a textbook of clinical neurology and does not deal with diseases, but discusses and analyses the symptoms and abnormal signs that may be presented by any case of nervous disorder on clinical examination. It is, in fact, an exposition of first principles in clinical neurology.

The plan of the book is one familiar to all who have studied at Queen Square. The "systems"—motor, sensory, and reflex—vision and the ocular movements, the speech function and its disorders, and visceral neurology are all dealt with in turn. Each section—e.g., that on the motor system—contains a brief statement of the relevant anatomical and physiological factors, and chapters on methods of examination and on the various categories of disordered function that the clinician recognizes under the heading of "signs and symptoms." Here, lucidly presented, and displaying that balance of emphasis that comes from an intimate knowledge of the methods and needs of clinical study, are those foundations of clinical neurology upon which alone the student of the subject can hope to build with the aid of experience a sound edifice of theoretical and practical knowledge, of clinical wisdom.

This little book will recall to those who have been Dr. Gordon Holmes's clinical assistants and clerks at Queen Square those strenuous and stimulating ward rounds that have helped to mould so many of the leading neurologists of to-day in all countries, and from them as from a younger generation of readers this "Introduction" will be sure of the warm welcome it deserves, for indeed no physician living has contributed more to the international prestige of British medicine at this time than its author.

MODERN PSYCHIATRY

Modern Psychiatry. By William S. Sadler, M.D. (Pp. 896. 50s.) London: Henry Kimpton.

In this large volume the author has attempted to construct a reference book of what he calls "personology," in which the practitioner may find information about the diagnosis and treatment of disturbances of the patient as a whole. Psychosomatic

medicine is dealt with briefly in the very forefront of the book, in an introduction, in order to stress the need for satisfying the patient who, having been to hospital, may, with great justification, say, "If this is the place where you come to find out what is *not* the matter with you, where do I go to find out what *is* the matter with me, for I am a most miserable and unhappy woman?"

The first part of the book is concerned with the meaning, structure, and maladjustments of personality at all ages. Next the psychoneuroses are taken up in considerable detail, reference being made to people who are merely difficult and queer as well as to those presenting frank manifestations of accepted psychoneurotic diseases. Thirdly the psychoses are similarly dealt with, and also mental defect. The chapter on this is termed "defective reaction types," among which are classed not only mental deficients but epileptics and endocrine deficiency cases as well. In the final part all forms of treatment are considered, including physical methods. This section has an interesting chapter on the influence of philosophy and religion. A brief description of the various schools of psychiatry is given in an appendix. Among these the author includes an "American School" which is evolving out of the others. The book is rounded off with an adequate bibliography and a full index.

This volume is too bulky to be recommended for general reading, but as a reference book it should be invaluable. The practitioner will find it difficult not to get from the ripe experience of the author some useful and stimulating information on any subject connected with the mind in health or disease.

MEDICAL PROGRESS IN THE ALLIED COUNTRIES

Acquisitions Médicales récentes dans les Pays Alliés. By A. Abaza. (Pp. 706. 1,000 francs.) Paris: G. Doin et Cie, 8, Place de l'Odéon. 1946.

Dr. Alphonse Abaza, a member of the medical staff of U.N.R.R.A., has attempted in this book nothing less than a general account of medical progress, mainly in Great Britain and the U.S.A., during the enemy occupation of France. In performing this colossal task his industry must have been prodigious, and the result is a comprehensive series of monographs which should be of great service to those who have been cut off from contact with the rest of the world, and find it difficult to grasp what has been happening there. Penicillin and other antibiotics and new forms of sulphonamide treatment occupy nearly half the book; the choice of subjects for the rest is an interesting reminder to anyone of the advances of the past five years. They include epidemic hepatitis, atypical pneumonia, D.D.T., B.C.G., methods of immunization against diphtheria, pertussis, typhus, and enteric fever, air sterilization, oestrogens, alloxan diabetes, new forms of insulin, dicumarol, fluorescence microscopy, thiouracil, thymectomy, and ligation of the ductus arteriosus. Large lists of references are given, many of which, especially in an appendix, are quite recent. The medical profession in France will find this work invaluable, and others in more fortunate countries may find it a useful source of information.

SURGERY OF THE OESOPHAGUS

Injuries and Diseases of the Oesophagus. By G. Grey Turner. Being the George Haliburton Hume Memorial Lectures. (Pp. 100; illustrated. 15s.) London: Cassell and Co.

Prof. Grey Turner in 1943 paid tribute to the memory of his former teacher and chief in the George Haliburton Hume Memorial Lectures delivered at Newcastle-upon-Tyne. These lectures on injuries and diseases of the oesophagus have now been republished in book form and are thus made available to a larger circle of readers. Prof. Grey Turner relates that his interest in the surgery of the oesophagus was first aroused by a clinical lecture on cancer of the gullet delivered by Hume to his pupils and by cases under his care. That interest has never flagged and, although an extensive acquaintance with the relevant literature is displayed, it has provided the author with a vast personal experience, upon which he has drawn in order to present a clinical picture from the point of view of a general surgeon. In consequence he has something, but not very much, to say about endoscopic methods of examination and treatment, but rather he describes those conditions which demand something more than endoscopy and lie in the territory where the throat specialist and the general surgeon must co-operate. The second chapter, on examination and diagnosis, is an example of this, for it is shown how much can be learnt from a proper clinical examination apart from the use of the oesophagoscope, which of course is not ignored. How deeply Prof. Grey Turner has pondered over the difficulties of the surgery of this elusive and rather defenceless tube is shown in the third chapter, on congenital anomalies; and while allowing himself the liberty of indulging in some reasoned speculation he gives a fascinating account of what has been attempted for the relief of infants so afflicted and foretells the lines along which further progress is possible.

The oesophagus still presents more than an average share of unsolved, or at any rate partially solved, problems, and among these the management of achalasia and of malignant disease are prominent. The views of the author on these debatable matters must command the respect due to one who has had great experience and some remarkable success, due largely to careful preliminary investigation and independence of thought. He is sceptical, like some others, about the short oesophagus, and there are other points which he has not attempted to discuss fully. His readers and many admirers of his work will be none the less grateful for what he has to say, and will be fascinated by the graphic description of his clinical experiences, and the accounts of some of his disappointments and impressive successes, so faithfully related.

Notes on Books

The March of Medicine in Western Ontario, by Dr. EDWIN SEABORN (Toronto: The Ryerson Press; London: Hatchards, Ltd., 30s.) falls naturally into three phases: the Indian period, the French, and the British. The first period chiefly, though not entirely, is a record of witchcraft and folklore; the second is concerned with medicine from the days when French explorers first set foot in Canada and found strange herbs as curative agencies. The French brought to Canada the first physician from Europe, François Guitault. The main bulk of the book, however, deals with the steady progress of British medicine in Western Ontario from humble beginnings to its present state of high efficiency. Dr. Seaborn has searched available records and for the later phases has drawn upon personal recollections and correspondence, bringing to life in an interesting manner the pioneers in a medical world who came from Britain and from the United States. His position is such that he can speak with authority, and he has brought to his task great enthusiasm and industry. The result is a work invaluable as a reference for the medical historian. The book is copiously illustrated and well documented.

A twelfth edition, revised and enlarged, of the *NAPT Handbook of Tuberculosis Activities* has been published, with a Commonwealth and Empire supplement, by the National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, London, W.C.1. It is a complete directory of tuberculosis dispensaries, clinics, sanatoria, etc. The main contents are grouped under local authority tuberculosis schemes, mass radiography units, centres for thoracic surgery, sanatoria and hospitals for the treatment of tuberculosis. The editor, Dr. Harley Williams, in his foreword notes that the years since the publication of the last regular edition have seen many changes, but the British system of tuberculosis control has survived them, and remains substantially unaltered. Since the first edition appeared some thirty years ago enormous progress has been made, but the NAPT is still conscious of what remains to be done both at home and over-seas. The price of this very useful handbook is 7s. 6d.

Outline of Industrial Welfare and Personnel Management is published by the Industrial Welfare Society, 14, Hobart Place, London, S.W.1, at 1s. post free. This booklet has been produced as a convenient introduction to the functions of a personnel department. It is written to help those who may wish to have a summary of the scope and content of personnel work. A full list of sources of reference is included as an appendix, together with a list of voluntary organizations and Government departments concerned with different aspects of social and industrial welfare activities.

The 102nd edition of the *Medical Directory,* for the year 1946, has been published by Messrs. J. and A. Churchill Ltd. The number of entries in the main section is 70,461, not counting the names of 4,070 temporarily registered practitioners which appear without addresses near the end of the book. The total 70,461 is larger by 1,458 than the figure for 1945 and nearly twice as large as that for 1900.

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REHABILITATION

The treatment of a patient is not completed until that patient is back at work and able to support himself. This is obvious enough, but it is an idea which has been widely realized only during the last five years, and perhaps even at the present day it is not generally accepted by the medical profession. The Council of the British Medical Association in 1945 took the initiative and set up a committee to consider and report on rehabilitation as it was practised and to make recommendations for the future. Its report appears in our *Supplement* this week, and the subject is considered from two aspects: first, the facilities that exist at the present time are described and reviewed, and then planned rehabilitation is discussed. Of disabled persons, 25% are surgical, mostly accident or orthopaedic, 25% are neurotic, and 50% are medical patients. Surgical rehabilitation is not as a rule difficult, because common sense indicates, to a large extent, what a man without a leg or an arm can and cannot do; and, further, the disease is normally not progressive. It is easy, therefore, to explain the facts to the management, and once the problem is settled it usually does not require further attention. The limitations of the neurotic, the tuberculous, or the patient with heart disease are much more difficult to assess and explain. Most attempts at rehabilitation therefore have up to now been made by orthopaedic surgeons, and this is well shown in the first part of the report, dealing with present facilities, but other branches of medicine must follow their lead even though the path will be more difficult.

The first recommendation is that the medical services of industry should be part of a comprehensive health service, administered by a single Government Department under a Minister responsible to Parliament. This is fundamental, and until it happens no rehabilitation scheme will work smoothly; when it happens the physician and social service in hospital will be able to work with the industrial medical officer and welfare officer in industry, as occurs at present with the large firms who have established such services with great success. Unfortunately for rehabilitation, though fortunately for the nation, the bulk of industry is carried on by small firms, and the only way for these to achieve the desired results is for groups to combine in local areas and employ doctors and welfare officers. Doubtless in this way there will be a variety of employment within the group, so that jobs may be found for people with all types of disablement. At the present time, however, between the individual health service and the industrial health service comes a third party—the Ministry of Labour—whose intentions are good, but since it cannot possibly have an understanding of the problems it serves only to obstruct the project and prevent the two services getting together. A great example of this lack of understanding was the plan, reasonable to the lay mind but extremely foolish to anyone with a knowledge of medicine, of rehabilitating silicotic coal-miners in South Wales as electric arc welders. In its attempt to achieve satisfactory employment for the disabled the Ministry of Labour has decreed that a register shall be kept, and that the labour of firms who do not have 2% of their employees on this register shall be controlled; that is a typical Civil Service approach to the problem, but what is wanted is that work within their capabilities shall be found for the grossly disabled. The former approach does not even achieve its object, since it merely means that the 2% will be made up of those with flat feet and subject to bronchitis, while nothing is done for those grossly incapacitated. Let it be stressed again that success can be achieved only by doctors in hospital with social service staff working together as a team with industrial medical officers and their welfare officers.

Another thorny aspect of the problem is the question of who directs the intermediate part of the treatment—exercises, gymnastics, and occupational therapy. In most hospitals in Great Britain there has been developed a department of physical medicine, a department which seems to cover a group of unrelated subjects—a study of rheumatic diseases, treatment by radiation, and medical gymnastics. This is undoubtedly a bad division of medicine, but it is so firmly established that it would be difficult to undo; further, it is impossible for each physician and surgeon in a hospital to have his own gymnastic and occupational therapy department, so that it seems inevitable that these should be under the general direction of one member of the staff, even if there is no clear reason why that member should be the physician who is a specialist in rheumatic diseases. The orthopaedic surgeons would undoubtedly like to control these departments, but common sense seems to suggest that they will be very much better under the care of a physician. Manifestly, this physician must work in the closest touch with the physician or surgeon under whose care the patient was for his initial complaint, and later they must together co-operate with the industrial medical officer. The report insists on the need for continuity of care and the overall responsibility by the specialist in charge, and supervision at all stages by a qualified medical practitioner responsible to him.

Many groups of people are disabled during childhood as a result of congenital abnormalities or of diseases such as rheumatic fever or poliomyelitis. It is important that these individuals are trained for suitable jobs in life and that they should be properly placed. At the present time the situation for them is most unsatisfactory. Theoretically and on paper the facilities for training them are there; they come under another Government Department—the Ministry of Education—but in practice the achievement of them is difficult, particularly in country areas. This,

however, draws attention to the fact that the placement of the disabled is only a part of a much bigger problem—the satisfactory placement of all individuals. Much harm, not only physical but usually psychological, is done by bad placement. Perhaps industrial medicine will be judged more on its success or failure in placing individuals in industry than on any other aspect of its work.

THE FATALITY RATE OF MEASLES

Measles is a familiar but important problem in child health. Despite the success which has been achieved in lowering the mortality from this disease it remains one of the largest causes of death among children. That the clearly defined characteristics of the trend of the mortality from measles—the seasonal rise, the definite periodicity, the marked progression with urbanization, the sensitiveness to social and environmental conditions—have had a fascination for the epidemiologists and workers in public health is clearly evident from the large number of articles on these subjects. The relation between degrees of urbanization and measles mortality can be easily demonstrated from the statistics of the inter-war period: during 1921–38 the mortality per 100,000 living was 140 in the county boroughs, 79 in the urban districts, and only 41 in the rural districts. The association between social conditions and measles mortality was equally striking: the mortality at ages 1–2 in 1930–2 by social class of father was 25, 70, 194, 246, 469 for social classes I to V. The apparent simplicity of the epidemic curve of measles has given rise to many hypotheses concerning the spread of infection. These give a fair description of an outbreak, but since most were of necessity based on mortality, as the incidence was unknown, they could not be rigidly tested. The chief difficulty in obtaining a simple mathematical expression for the trend of measles is that of spatial distribution. The spread of infection through a city from the one or more foci in which it begins is comparatively slow and variable, and the disease may take several months to cover the whole area. If as sometimes happens the first appearance of the outbreak is postponed, then the disease dies down as usual in the summer months, leaving districts unattacked, and as a consequence the number of susceptibles is unduly high in the next outbreak.

Extensive data on the incidence of measles have been scarce and most of the work in England has been confined to deaths, since measles was not generally notifiable before 1940, although in some areas notification or a modified form of notification—e.g., the first case in a household—had been made for varying periods. During the first two years of notification, 1940 and 1941, over 800,000 cases were notified. The death rates for these years were 21 and 29 per million and were less than one-twelfth of the rates of 30 years earlier. Some cases of measles escape notification because medical aid is not sought, measles being regarded by the parents as a mild disease. If allowance is made for these cases it is evident that the fall in mortality was not due to any decrease in prevalence. The surprisingly large reduction that must have taken place in the case fatality led Lieut.-Col. William Butler[1] to review the recent trend of measles. For the first time it was possible to compare the trend of mortality with that of incidence for London and the large towns. It is well known that for many infectious diseases the fatality rate varies not only between epidemics but during an epidemic. Col. Butler has attempted to relate the deaths to the appropriate cases from which they were derived by means of a smoothed moving average which he termed the "batch fatality rate." The calculation of this rate was based on a nine-weeks period, and is found by dividing the deaths during the last five weeks by half the cases in the first four weeks plus all the cases in the middle (5th) week plus half the cases in the last four weeks. Though all the assumptions on which this index is based may not be justified the batch fatality rate does give a good approximation to the trend of fatality.

Col. Butler has in the April and May issues of the *Monthly Bulletin* of the Ministry of Health and the Emergency Public Health Laboratory Service extended the application of his index up to early 1946. The batch fatality rate during the six years 1940–5 showed a winter maximum and a summer minimum. The maximum ranged from 4.2 to 6.4 and occurred once in October, twice in November, once in January, and twice in February. The minimum value varied from 0.2 to 1.4 and appeared once in July, three times in August, and twice in September. An interesting feature of the maximum values is that they do not occur in the winters which contain the peaks of the epidemics—e.g., the peak of notifications in the 1940–1 epidemic occurred ten months after the maximum batch fatality rate of 1940 and eleven months before the maximum batch fatality rate of 1941. This may be partly due to the fact that notifications tend to be more complete in periods when the disease is very prevalent than when the incidence is low and slight attacks are more likely to pass unsuspected. The batch fatality rates for the first nine weeks of 1946 were exceptionally high, with a maximum of 7.6. The largest value for the preceding six years, 6.4, was exceeded three times, and on seven occasions higher values were found than the yearly maxima of 1941–4. That the case fatality during the first weeks of this year was large could have been shown by the customary method of relating the deaths in the period to the number of notifications. The usual approximation to the fatality rate gives, for the first nine weeks, a rate of 4.6 per 1,000 in the great towns, whereas for the corresponding period in the six preceding years the rate ranged from 1.3 to 4.1. If short periods are used the method of relating deaths and cases in the same time-interval will understate the actual case fatality when the incidence is increasing rapidly, and conversely it will overstate the actual rate when the incidence is falling rapidly, and a rapid change is a feature of measles—e.g., in 1945 the notifications ten weeks either side of the maximum differed from the maximum by about 15,000. Col. Butler's batch fatality rate overcomes to a certain extent the effect of rapid changes in the trend of notifications, though his index has the properties of a moving average which tends to smooth out the peaks in a curve by spreading any abrupt change over a period.

[1] *Journal of the Royal Statistical Society*, Vol. CVIII, 1945, parts iii and iv.

FOOD-BORNE OUTBREAK OF STREPTOCOCCAL SORE THROAT

Milk-borne streptococcal infections are common enough, and numerous epidemics have been recorded in practically every country in which close attention has been paid to milk hygiene, but well-documented accounts of streptococcal food-poisoning due to other vehicles are uncommon. In the outbreak of tonsillitis and pharyngitis recorded by a team of American Army workers[1] at Fort Bragg, North Carolina, infection appears to have resulted from the consumption of creamed eggs served for breakfast. The mode of preparation of the eggs could not be ascertained accurately, nor was the way in which they became contaminated at all clear; but the eggs had been boiled, sliced by hand, and left, presumably at kitchen temperature, for ten hours before being served. Of 228 men who ate in the same messroom, 86 (37.7%) were attacked within three days, most of them within two days. There were 18 (14.7%) secondary cases among those who had escaped primary infection. Accompanying the 86 primary cases were 9 symptomless carriers, and 22 symptomless carriers accompanied the 18 secondary cases. Clinically the cases were exactly like those met with in air-borne infections. Patients whose tonsils had been removed had less exudate in the throat, harboured smaller numbers of streptococci, and rid themselves of the infecting organisms more rapidly than those whose tonsils were still intact. For example, only 19% of the tonsillectomized group were still carrying streptococci after six weeks as opposed to 57% of patients with tonsils.

The effect of sulphadiazine, in ordinary dosage, was studied under controlled conditions on 110 patients admitted to hospital. Apart from alleviating the subjective symptom of sore throat, the drug had apparently little effect. No significant change was noticeable in the objective signs, nor was the incidence of non-suppurative complications any less in the treated group. The number of streptococci in the throat diminished during the period of treatment, but returned to "normal" as soon as the drug was stopped. Non-suppurative complications affected 13 patients—3 had acute rheumatic fever, 2 suspected rheumatic fever, 4 febrile relapses without localizing signs, and 4 an afebrile cardiac disturbance associated with electrocardiographic changes detected during convalescence. Once more, therefore, the association between haemolytic streptococcal infection and acute rheumatism is manifested.

For the diagnosis of streptococcal infection, the authors insist not only on the presence of haemolytic streptococci in a throat swab, but also on the demonstration of a rise in the serum content of streptococcal antibodies. Extensive experience of upper respiratory infections at Fort Bragg has shown that about half of all patients admitted to hospital with an exudate in the throat do not harbour haemolytic streptococci; and that many patients suffering from a sore throat from which haemolytic streptococci are isolated have no rise in streptococcal antibody titre and are merely fortuitous carriers suffering from some other form of respiratory disease. In the present outbreak 80% of all patients admitted to hospital showed a rise in the antistreptolysin content of the serum, and 20% in the antifibrinolysin content. Altogether 85% of patients had a rise in one or other, or both, antibody titres. It is of interest that although the infecting organism belonged to group A, type 5, none of the patients developed a rash. In many milk-borne outbreaks cases of scarlet fever and of septic sore throat have appeared side by side, but in spite of a normal proportion of Dick-positive subjects at risk in the exposed population at Fort Bragg no scarlet fever cases were observed.

[1] Report of Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina. *Johns Hopk. Hosp. Bull.*, 1945, **77**, 143.

HUMORAL TRANSMISSION OF NERVE IMPULSES

Dr. Otto Loewi has discussed in the Janeway Lectures,[1] given in New York, the present position of the theory of the humoral transmission of nerve impulses, which has been built upon the demonstration he first made in 1921. He showed that when the vagus nerve to the frog heart is stimulated, acetylcholine is liberated and is responsible for the cardiac arrest. The theory supposes that, in general, nerve impulses are transmitted to the end organ they supply, or to another nerve, by the mediation of a chemical substance and not by the passage of an electrical current. So far we know of only two substances which serve this function, acetylcholine and adrenaline.

Acetylcholine itself has had little application because of its instability. Belgian physicians use it, however, to terminate paroxysmal tachycardia; it is given by intravenous injection and the initial dose is as much as 10 mg. If this amount is ineffective the dose is doubled, and up to 160 mg. has been injected at once. Acetylcholine is destroyed in the body so rapidly that there is no record of a fatality, though these large amounts cause momentary cardiac arrest. More stable esters of choline, notably the carbaminoyl ester known as carbachol ("doryl" and "moryl" are the proprietary names), are used in atony of the bladder or intestine. Two fatalities are on record, one at Oxford[2] in 1942 and one at Croydon a few months ago (p. 1002), both of which were due to an overdose of the "moryl" preparation. The value of carbachol in treating urinary retention is widely accepted; its value in preventing or relieving paralytic ileus has not yet received the widespread investigation it deserves, though Marden and Williamson[3] describe its use.

The effects of acetylcholine are prolonged by the administration of physostigmine and still more by prostigmine, and for this reason these substances antagonize the action of curare on skeletal muscle. The resemblance between the symptoms of myasthenia gravis and those of curare poisoning led Mary Walker[4] to use physostigmine in myasthenia. The success attending this treatment led to a closer analysis of the pathology of the disease. Walker's evidence[5] that the skeletal muscles of these patients release a curare-like substance into the blood has recently been confirmed by Wilson and Stoner.[6] Harvey,[7] on the other hand, believes that in myasthenia the nerve liberates less acetylcholine than usual, for when acetylcholine is injected intra-arterially the muscles are much more than normally sensitive to its action. Myasthenic muscles react like muscles which have been denervated. Intra-arterial injection of acetylcholine, or of prostigmine, furnishes a useful diagnostic test; in myasthenia it produces contraction, while in the normal subject it causes temporary paralysis.

Loewi now puts forward a new theory to explain the great increase—as much as one thousand-fold—in the sensitiveness of muscle to acetylcholine which follows denervation. He suggests that the hypersensitivity of the denervated cell represents its true sensitivity, but that the nerve fibre normally controls and reduces this sensitivity. Loewi proposes this as a second function of nerve fibres, in addition to their primary function of conducting nerve impulses. If the theory suggests a new experimental approach to this problem, which was revealed by Auer and Meltzer as long ago as 1904, it will indeed be useful.

[1] *J. Mt. Sinai Hosp.*, N.Y., 1945, **12**, 803, 851.
[2] *British Medical Journal*, 1942, **2**, 28.
[3] *Surg. Gynec. Obstet.*, 1939, **69**, 61.
[4] *Lancet*, 1934, **1**, 1200.
[5] *Proc. roy. Soc. Med.*, 1938, **31**, 722.
[6] *Quart. J. Med.*, 1944, **13** (new series), 1.
[7] *Johns Hopk. Hosp. Bull.*, 1941, **69**, 566.

OTITIS IN THE NEWBORN

Infections in the newborn are one of the most important causes of neonatal mortality; they probably rank next on the list after intracranial birth trauma and prematurity. In a series of 499 infants dying in the first month of life Macgregor[1] found infection at necropsy in 36.5%, and in no less than 73.6% in those dying between the second and fourth weeks. Much of this is the result of cross-infection in the nurseries of maternity wards and hospitals. Epidemics are not uncommon, and outbreaks of pemphigus, diarrhoea, and pneumonia are still too frequent. The late Prof. McKim Marriott used to stress that any infant properly and adequately fed (especially if on the breast) and without constitutional disease must, if losing weight, be suffering from some infection. That this might be true even in the neonatal period has often been overlooked. In the newborn, acute infections may run a very rapid course and cause death in a matter of hours; in the absence of a necropsy death may be wrongly attributed to intracranial birth injury.

When infection has been suspected attention has been focused particularly on the nasopharynx, skin, kidney, and bowel, and the ears have not been specially investigated, partly because of the difficulty of routine inspection of the eardrums at this age. The importance of regular examination of the ears in older infants suffering from gastro-enteritis and unexplained fever is recognized and otitis is known to be a common cause of failure to thrive.

Two recent papers stress the importance of otitis in the newborn. The first, by Couper,[2] deals with the empirical use of penicillin in a small series of 20 infants who were going downhill: 8 were premature and 12 full term, and all of the latter had acute otitis. No myringotomies were performed and 11 of the 12 infants recovered. Clinical improvement followed promptly on penicillin treatment, but weight gain was sometimes delayed. The second paper, by Lévy-Solal, Lelong, Joseph, and Debain,[3] deals with 11 newborn infants seen during a nine months' period at the St. Vincent de Paul Hospital in Paris. In this series penicillin was not used, but results similar to those obtained by Couper followed myringotomy in every case. All the infants were breast-fed. In 5, the infection occurred between the tenth and twelfth days, in 2 on the fifteenth day, and in 4 between the fifteenth and twenty-first days. Symptoms were somewhat indefinite, but when looked for a recognizable syndrome was observed—taking the breast less well, not gaining weight, slight pallor, occasional vomiting, and some alteration in the character of the stools. The temperature varied but was never high; indeed it was sometimes normal, and in one case subnormal. The clinical picture suggested otitis, and although the drums often showed little change, myringotomy resulted in prompt improvement and gain in weight. In some cases the diagnosis was made *a posteriori* by the fact that immediately after myringotomy the weight began to increase. Of the 11 infants reported, 7 were cured by a single paracentesis and the other 4 required two or three. The authors further contend that an unrecognized otitis originating in the first fifteen days of life may be the cause of subsequent marasmus. Certainly it is the experience of most paediatricians that in a high proportion of necropsies on infants dying of marasmus there is found an otitis or mastoiditis that had been overlooked during life. The question arises whether, as is suggested in this paper, every infant who goes off his feeds and ceases to gain weight on two consecutive days should have a myringotomy forthwith (unless there is an evident cause for the upset) or whether chemotherapy should be instituted. Further experience may provide the right answer; in the meanwhile the authors have done a service in recording their experiences, and paediatricians and obstetricians alike should bear in mind the possibility of otitis as a clinical entity in the newborn.

[1] *Arch. Dis. Childh.*, 1939, **14**, 323.
[2] Ibid., 1945, **20**, 117.
[3] *Presse méd.*, 1946, **54**, 25.

SOCIAL MEDICINE AT OXFORD

The Institute of Social Medicine at Oxford—the first of its kind—describes in its brief annual report a number of investigations now in progress under its auspices. It must be borne in mind that the observations and researches of such a body are in connexion with groups and populations rather than with individuals, and that they require different methods and collaborations from those undertaken in clinical medicine. One of the investigations is a child health survey in Oxford, using eight welfare centres in the city. The purpose is to study and compare the health, development, and sickness experience of children in all social groups from the first weeks of life to the age of five. Another investigation is a statistical analysis of sickness absence at a great industrial works near Oxford, including correlations of the main causes of sickness with such factors as age, sex, trade, and season. It is hoped later to take particular causes of sickness absence, such as peptic ulcer and the chronic rheumatic diseases, for a more detailed inquiry. A third investigation is an extensive survey of school-children at ages 11–15, in several districts of England and Scotland, to determine the varying incidence of thyroid hyperplasia in relation to the iodine content of drinking-water. An *x*-ray department has been set up at the Institute and is carrying out skeletal studies of several hundreds of children, including Dutch children in this country, with a view to discovering evidences of nutritional deficiency and the incidence of other abnormalities and also information, at present lacking, on the range of variability within the "normal" of bony characters at different years in the period of growth. A "pilot survey" has also been made of 42 pairs of twins of school age, with a record of face, eye, and hair colour, radiographical resemblances, and heights and weights, and a much wider inquiry with an extended range of anatomical and physiological observations is contemplated. It is thought that while human genetic studies in their medical bearings have been largely based on family trees, much might be learned from a continuing follow-up study of the growth, health, and sickness of individuals of the same age and parentage and living under identical nutritional and environmental conditions. A statistical analysis of still-birth rates and neonatal death rates in the counties and county boroughs of England and Wales, in relation to such factors as urban and rural conditions, population density, and local employment of women, is another useful enterprise. If some "black spots" are revealed by such an analysis a specific local survey will be undertaken. In addition to all this, the Institute has undertaken at the Radcliffe Infirmary a course of instruction in social medicine for students in the clinical period and has also issued a number of publications. Prof. John A. Ryle, the director, and his staff have had a very promising first two years of work.

Viscount Addison, M.D., F.R.C.S., Secretary of State for Dominion Affairs and Leader of the House of Lords, was entertained to lunch on his 77th birthday (June 19) by the other Labour peers, when the Lord Chancellor handed him an inscribed silver cigarette box.

BRITISH LEGION RHEUMATOLOGY UNIT

The British Legion unit of rheumatology at the Three Counties Emergency Hospital, Arlesey, Beds, has begun work, and the first patients, all ex-Service men and women, have arrived. It is a one-year scheme for the intensive treatment of arthritis, rheumatism, and allied diseases, under the direction of Dr. C. B. Heald, who has written a note on what is available or will be possible at this special unit.

The doctors in charge of the patients will be men who have made, or are making, rheumatology their special interest and work. The majority of the nurses have volunteered to work for the British Legion, to help ex-Service personnel suffering from these diseases. The physiotherapists have all been chosen because they possess some advantage in training or experience that helps to fit them into the team. The hospital is in the country, surrounded by a home farm, thus ensuring the quiet and sense of peace so essential in all forms of arthritis. Any question of isolation and inaccessibility to London as a result of this situation has been met by the Joint Council of St. John and the British Red Cross Society providing an almost daily "ferry service" in order that contact with friends and relatives may be kept alive and active. Since the patients will all be resident in the hospital, but not necessarily confined to bed, daily treatment will be available.

The first period of each patient's stay will be concentrated on an accurate basic diagnosis and assessment of his or her condition. During this time one of the advantages the unit has secured becomes most actively operative. It is maintaining close liaison with the Royal Free Hospital, and all general medical and surgical departments are continuously available, with their expert visiting consultant staff from London. The special departments have also signified their desire to support this investigation; for example, the professor of pathology lives near the hospital, and the senior throat and ear, skin and nerve specialists visit weekly. This is the first time that any London teaching hospital has so clearly associated itself with a scheme of this size and scope in an intensive attack on arthritis and rheumatism. The British Legion has also secured as its consultant observer Lord Horder, chairman of the Empire Rheumatism Council.

A feature of the scheme will be the steady and progressive attack on the patient's condition in an atmosphere of "no hurry, no worry, and we shall see you back into the wage-earning ranks if possible." For this aspect of the work, a rehabilitation supervisor has been appointed. Here the New Zealand Division has been most helpful, and has seconded its chief physiotherapist, Capt. Guyton, a medical corps officer, with extensive experience at the hot springs of Rotorua and Hanmer. His duties will range from supervision of the diversional and recreational needs to the replacement of patients in industry. The Ministry of Health has also shown support and collaboration by approving the unit as suitable for the appointment of a specializing resident medical officer.

ROYAL MEDICAL BENEVOLENT FUND

Projected Homes for the Aged

Sir Arnold Lawson, in his address from the chair at the annual general meeting of the Royal Medical Benevolent Fund on June 12, referred to a proposal, which was assuming practical shape, for the provision by the Fund of homes for old and infirm members of the medical profession or their dependants. As a beginning, a house had been found in Putney which admirably fulfilled the ideas which the committee had in mind, and it was hoped in a month or so to announce the completion of the purchase. It would provide accommodation at an extremely small rental for about a dozen elderly ladies, each of whom would have a comfortable bed-sitting room, and there would be communal sitting and dining rooms and access to a large garden. If this initial scheme was a success it was hoped to extend it by providing other houses for married couples or for a larger number of single people of either sex. The project was an ambitious one, but to carry out the complete scheme would cost a great deal of money, and the extent to which it could be enlarged by buying more property, and building perhaps a small nursing home, depended upon the generous support of the profession. He added that the residences would not be called "homes" or given any label which signified that the occupants were recipients of charity.

Position of the Fund

In reviewing the general position of the Fund Sir Arnold Lawson said that the number of subscribers was now in excess of all previous records; legacies had been more abundant than ever; the Christmas gifts appeal had risen to a new level of over £2,000, and "on all sides there are indications that our profession increasingly recognizes what we stand for and is desirous of taking part in our efforts." Those who were concerned with a charitable fund must necessarily be very much aware of the present tendencies towards State control and the taking over of endowments. It would be a tragedy if the Fund were to be merged into the general structure of a national social service or made subject to the whims of a Government Department. The nationalization of charity meant inevitably the restriction of private giving.

Sir Arnold Lawson was re-elected president of the Fund, with Dr. C. L. Batteson as treasurer, and Mr. R. M. Handfield-Jones as honorary secretary. The resignations of Sir Alfred Webb-Johnson, Dr. N. G. Horner, and Dr. Z. Mennell from the Committee of Management were accepted with regret, and Prof. G. Grey Turner and (representing the Medical Women's Federation) Dr. Frances Huxley were elected to the committee. Thanks for continuing help were expressed to the Ladies Guild, the British Medical Association and its Charities Trust Fund, the Medical Insurance Agency, and the medical press.

MEDICAL BIRTHDAY HONOURS

The names of the following members of the medical profession were omitted from the list of Birthday Honours printed last week at page 961: Robert Benedict Bourdillon, *M.C.*, A.F.C., D.M., Director, Electromedical Research Unit, Stoke Mandeville Hospital, Medical Research Council, was appointed C.B.E. (Civil Division); Surg. Capt. James White Thomson, M.B., Ch.B., British Guiana Garrison, M.B.E. (Military Division); and Rai Bahadur Kanan Bihari Sen Roy, M.B., B.S., Deputy Inspector-General of Civil Hospitals, United Provinces, M.B.E. (Civil Division).

Correspondence

The Population of India

SIR,—Dr. B. H. Kirman (June 8, p. 890) states that it appears to him "at once fantastic, inhuman, and unscientific to describe India's problem as an excess of population." A few years ago only a very small number of persons would have come within the scope of this scathing indictment, but recently there has been a remarkably rapid change in the outlook on the population problem, so that to-day most of the leading experts in public health, economics, and sociology in India are committing the offence which has aroused such feelings of indignation.

Startling evidence of this change of outlook is found in the very important report just issued by the Health Survey and Development Committee, which was appointed by the Government of India in October, 1943. A distinguished Indian, Sir Joseph Bhore, was the chairman of the committee; 19 of the 25 members were Indians, the rest were Europeans. Most of the members were prominent experts in medicine and public health, but seven, including the chairman, were laymen. The Indian members were fully representative of all the great religious communities and of every shade of political opinion. After more than two years spent on intensive survey and inquiry, the committee have now produced a comprehensive report on every aspect of health conditions in India. In the section dealing with the population problem the following passages occur:

"The question of the need for a continued adjustment between the population and the resources that are available cannot be ignored and should receive serious consideration." . . . "It has been the experience in more than one community that, under favourable conditions, the population doubled itself in about 20 to 25 years." . . . "If our proposals are carried out there is every reason to believe that there will be a saving of at least three million lives every year in British India." . . . "Under such conditions the very large increase of 83 millions which took place between 1921 and 1941 is likely to be reached within half that time. A purposeful control of mortality without a corresponding fall in the fertility rate of the community can thus have far-reaching consequences." . . . "A limit to economic productivity will be reached, sooner or later, and uncontrolled growth of population must, as far as we can see, outstrip the productive capacity of the country." . . . "We feel that the only practical steps that can be taken are: (1) a relentless pursuit of the measures that are now being proposed for the reconstruction of the national life in order to raise the standard of living, and (2) the spreading of the knowledge of birth control, as far as the limitations imposed by the peculiar circumstances of the country, to which we have referred, will permit." . . . "We consider it highly desirable that the population problem should be the subject of continuous study."

A remarkable feature of this momentous report is that it was almost unanimous; of the 19 Indian members of the committee only one found himself "unable to subscribe to some of the recommendations," and of the 6 European members only one dissented from the recommendations on the population problem. Neither of these two dissenters has given any reasons for his disagreement. No further comment is needed on the letter of Dr. Kirman or on the other recent letters from writers who have argued either that there is no population problem in India or that, even if the problem does exist, it must not be discussed lest the susceptibilities of the people of India should be offended.—I am, etc.,

Hawkhurst, Kent. J. W. MEGAW.

Fibrositis and Prolapsed Disk

SIR,—Following the paper by Prof. Arnold Sorsby and Dr. A. Gormaz (April 20, p. 597) I wrote a letter (May 18, p. 774) in which the main plea was for the abolition of the term "rheumatism" or for a more limited definition. In his reply to my letter Mr. J. S. Maxwell (June 8, p. 889) was taken up by two side issues—namely, "fibrositis" and prolapsed intervertebral disk, though, in fact, prolapsed intervertebral disk was never mentioned by me. With regard to his remarks on "fibrositis," Mr. Maxwell is an orthopaedic surgeon, and in that stormy torrent of medical practice there is perhaps little or no time to devote to the careful study of many painful conditions, especially those whose pathology is unknown and whose recovery is invariable. Like him, I have suffered from pain about the right shoulder which recovered spontaneously, though, unlike him, I would not be prepared to say that it was limited to or in any way related to the trapezius muscle, nor, in my case, was it connected with temperature changes or open windows. Whether or not this constitutes a "clinical entity" I do not know, but I suggest that there is no proof that such a pain is in any way related to fibrous tissue, nor indeed that it has an inflammatory basis. I would not go so far as to suggest that my pain, still less his, was psychogenic, but I notice that Mr. Maxwell does not comment on my statement that the bulk of cases labelled "fibrositis" are, in fact, examples of psychogenic pain. Like him, we have all seen people with sciatica, or almost any other malady, who attribute their troubles to sitting in a draught, though this aetiological "fact" is probably more often than not in the same class as being "dropped on the head when a baby," or being "scratched by a rusty nail," and the absence of abnormal signs, and the spontaneous recovery, do not, to my mind, in any way prove the patient's contention.

I should not have thought that there was any fashionable tendency to label conditions "prolapsed intervertebral disk" which were previously labelled "fibrositis," with the sole exceptions of those complaining of sciatic pain or "brachial neuritis" with their almost invariable accompanying signs. I understand that one of the commonest sites for "fibrositis" is the scalp, and I have never heard of a scalp pain being attributed to a prolapsed cervical disk. I would agree that a prolapsed disk has not always been found at operation in cases of sciatica, though I think such negative exploration has become increasingly infrequent during the past few years; such a state of affairs has probably applied in the past to every pathological condition which has become amenable to surgery. In both sciatica and so-called "brachial neuritis" the importance of a prolapsed disk as causative factor is now well established.—I am, etc.,

Leeds. HUGH G. GARLAND.

The Spread of Infection

SIR,—The article on nasopharyngeal infections by Dr. Ronald Hare and Miss Dorothy Mackenzie (June 8, p. 865) and the letter on influenza and cholera by Dr. J. Walker Tomb (p. 887) show a commendably alert attitude to epidemiological problems. The writers contend that there is much more to understand in the variation of virulence in bacteria and viruses and the alterations of resistance in the tissues than has yet been realized. The rather simple belief that epidemics can be equated in terms of a species of organism known to produce disease in some circumstances and a human being lacking in antibodies to that species has been given too much assent because the two factors mentioned are comparatively easily ascertained. Latent infection and the rise from it of endogenous disease in the carrier and exogenous disease in others are subjects which may be better understood by extensions of Shope's work on the non-infective form of the swine influenza virus found in the lung worm. These results are quoted by Hare and Mackenzie and by Tomb, who also refers to his own published conclusions that the alteration of cholera vibrios in the human intestine from a non-infective to an infective form is important in the cause of epidemic cholera. Systematic study of bacteria and viruses will be needed with a receptive and critical outlook, and it is hoped that this will be hastened by the Society for General Microbiology which was formed last year. There have been for some years carefully prepared results in this field which are too much ignored. One of these is the occurrence of the G forms of certain organisms (P. Hadley, *J. Infect. Dis.*, 1931, **48**, 1), which vary so much from the forms usually recognized that they have been left out of account in the study of diseases caused by better-known forms. Confirmation of much of this work has been given by other workers, including, in this country, A. Haddow (*J. Infect. Dis.*, 1938, **63**, 129). Another result is the conversion of pneumococci from one type to another *in vivo* and *in vitro*; this fact needs special consideration because the change is made from an avirulent pneumococcus to a virulent one of another type. The beginning of this latter work was made by the late Fred Griffith (*J. Hyg.*, 1928, **27**, 113) in this country, but the development of it has been left to American bacteriologists. The occurrence in your *Journal* of the article and letter to which I have referred indicates, I hope, that fresh knowledge will soon be sought and welcomed in studies of epidemiology.—I am, etc.,

London, N.19. J. M. ALSTON.

Spread of Nasopharyngeal Infections

SIR,—St. Kilda provides further and earlier evidence in support of the theory of indirect transfer of nasopharyngeal infections discussed by Dr. Ronald Hare and Miss Dorothy Mackenzie (June 8, p. 865). In 1697 Martin Martin, a native of Skye, M.A. of Edinburgh University and later M.D. of Leyden, visited the island. In his *Voyage to St. Kilda* he records that the inhabitants always contracted a cough when the steward and his retinue from Skye paid their yearly visit, and whenever any strangers landed and stayed for any time. The cough, very productive of sputum and lasting ten to fourteen days, affected all the islanders. Infants at the breast were very subject to this cough, a fact brought forward to convince Martin, who at first considered the notion of infection fanciful. When any foreign goods were brought there the cough was of longer duration than otherwise. Martin does not say that the visitors were free from cough, but in view of his reluctance to admit that the islanders' theory was correct it is probable that they were, in fact, free, for elsewhere he says that if the fever had been among those of the steward's retinue, even before their arrival in St. Kilda, some of the islanders were infected. After the infected cough was over, neither young nor old among the strangers and inhabitants of St. Kilda did so much as cough once more, though frequently assembled for divine service.—I am, etc.,

Southampton. W. P. CARGILL.

Smallpox in the Vaccinated

SIR,—Dr. C. Killick Millard (June 8, p. 890) is correct about the soldier. He had been successfully vaccinated and revaccinated and he was the cause of the outbreak. Though it does not necessarily follow that this was because he was a mild case, for cases in Southend were caused by a virulent unvaccinated case to whom no doctor was called as it was thought to be a case of chicken-pox.

Dr. Killick Millard appears to advocate no vaccination until cases occur. Surely he would not include troops going to India. If he considers these should be vaccinated I cannot follow his reasoning, as if troops for India should be vaccinated so should civilians going to India, so that always there will be a risk of the missed, mild, modified case of variola. Perhaps Dr. Killick Millard will agree with this, but holds that people in Great Britain should not be vaccinated until an outbreak starts, on the grounds that an immediate virulent case or two will readily be diagnosed and so a widespread epidemic will be prevented at the cost of only a few deaths. Surely, recent outbreaks have proved this contention to be incorrect. Mild modified

cases in a number of instances recently have been readily diagnosed and outbreaks have not been widespread. The alternative appears to be between an unvaccinated population and a risk of some deaths and *perhaps* a very limited outbreak. That seems to be Dr. Killick Millard's choice.

On the contrary, I prefer a vaccinated population, even without revaccination (though this should be advised), few deaths, if any, and *perhaps* a rather more widespread outbreak of modified cases. I do not agree that the size of the outbreak at all necessarily depends upon the type of the first cases. I wonder if Dr. Killick Millard would apply the same reasoning to immunization against diphtheria ?—I am, etc.,

Health Department, Colchester. W. F. CORFIELD.

Naples Typhus Epidemic

SIR,—Your issues for April 13 (p. 579) and May 4 (p. 700) contain, respectively, an article by Lieut.-Col. H. J. Craufurd-Benson and a letter by Col. H. D. Chalke on the Naples typhus epidemic in which certain inaccuracies occur which I am anxious to correct.

It will be appreciated in the first place that the epidemic was a civilian affair and, as such, the first brunt of it fell on the Allied Military Government organization of the Fifth Army, then established in Region III with H.Q. at Naples. I took over as colonel, Public Health and Welfare, on Dec. 3. Lieut-Col. Chalke was then A.D.H. at Adv. Admin. Echelon, A.A.I., and was neither the "Senior Hygiene Officer in Naples" nor directly concerned with the epidemic.

Drs. Soper and Davis of the Rockefeller Foundation, to whom the greatest part of the credit for the control of the epidemic is due, were sent over to me by N.A.T.O.U.S.A. At no time did they "work alone." I had the privilege of having them working with me as part of the organization I was then building up in A.M.G. to fight the epidemic.

Col. Chalke refers to "the whole-hearted co-operation of British and American medical services" and to "the pooling of resources." For the sake of accuracy it should be known that everything A.M.G. required to fight the epidemic in those early December weeks had to be begged for, or borrowed (with difficulty), or even stolen! A request made by me for insecticidal powders on Dec. 3 was refused—if not treated with scorn. Other than the few decrepit cars obtained from the Italian authorities (who played 100%), I found it impossible to get any transport for the dusting and case-finding team from the Army. As another example of "whole-hearted co-operation" a reference had to be made to the highest possible authority to get the R.A.F. out of the only infectious diseases hospital in Naples. It was not until the U.S. Typhus Commission came in armed with full authority to *demand* anything they wanted that the resources of the Armies in men, transport, and material were placed at their disposal. The U.S. Commission took over the organization established by A.M.G. on Jan. 3, and expanded it, but the epidemic had already been checked by A.M.G., as the drop in incidence on Jan. 9 and the subsequent steady decline showed.

Because of the refusal of insecticidal powder in the beginning steam disinfestation was used—but only on a minor scale because of the immense difficulties met with in finding the required materials in the shattered city. We did succeed in opening centres at the Albergo dei Poveri, at the Pace Hospital, and at the Ospedali Riuniti. They were used until the dusting powders became available.

The first public dusting centre was opened at the railway station on Dec. 15. MYL was used merely because of the difficulties experienced in finding grinding and mixing machinery. D.D.T. was brought into use about ten days after the first dusting, scarcely "relatively late" in the epidemic. D.D.T. is the insecticide of choice because of its prolonged action. MYL was a useful stop-gap which was backed soon after by D.D.T.

If there is one lesson to be learnt from the Naples epidemic it is the absolute need for Military Government in the field to have an equal priority in bidding for men, transport, and material as any other organization in the field. This lesson had not been fully appreciated in N.W. Europe, where I was Director, Public Health, A.M.G., 21 Army Group. It would have saved valuable time in both theatres of war.—I am, etc.,

Nagpur, India. W. H. CRICHTON.

Hernia and Strain

SIR,—Mr. Stephen Power (June 8, p. 888) adds his testimony to the growing belief that the transversalis fascia is of primary importance in the aetiology of inguinal hernia. He implies that in young men the repair of these herniae should be limited to removal of the sac and suture of the torn fascia, deploring the "building up" of "a barrier at an anterior level." His wording is a trifle ambiguous, and that the operation should be *limited* to suture of the transversalis fascia and reconstitution of the remaining structures may not be his meaning. For my purpose this ambiguity is of little importance. What *is* important is that Mr. Power gives operative advice based on anatomical observations without reference to his results. I submit that this is not good enough. In this matter one cannot hope to carry conviction without figures. I do hope he will repair this omission.

That the "barrier at an anterior level" can be an effective barrier was, I think, demonstrated by the late results reported by Mr. J. T. Morrison and myself at the recent meeting of the Association of Surgeons. We quoted 230 unselected adult inguinal herniae of great variety, with recurrence in 4. In all of these cases the sac was removed and the canal repaired (without previous suture of the transversalis fascia) with a strip of aponeurosis taken from the external oblique in the manner strongly advocated these many years by my collaborator.—I am, etc.,

Liverpool. CHARLES WELLS.

SIR,—Mr. Stephen Power (June 8, p. 888) has described a very important factor in the anatomy of hernia. He points out the existence of a hole in the fascia transversalis at the internal ring, and stresses the importance of its closure after the sac has been ligated and removed. I feel sure that if this procedure is not carried out during the repair of a hernia the chances of recurrence are very much increased. If this opening in the fascia transversalis is left patent the stump at the sac directly behind it has no barrier to prevent it bulging through the opening when the patient strains, and so extending itself forward and becoming elongated to give rise to a new sac formation.

I feel that the existence of the hole in the fascia transversalis in inguinal hernia has not been described fully in the textbooks on hernia. In fact, many herniotomists are not aware of its existence. During the meeting of the Association of Surgeons in London in May, when a discussion on hernia took place, no mention was made by any of the many speakers of the existence of a hole in the fascia transversalis and the importance of its proper closure. While performing a radical cure on hernia, I always make it a practice to point out the opening to my assistant by placing my forefinger into the opening prior to sewing it up. The size of the hole is very variable. In some cases it can admit two fingers, and one can see how far medially the deep epigastric vessels are displaced. The opening in the fascia should be closed by means of a continuous suture, just enough room being left for the cord to emerge.

As regards the suture materials used in the repair, I am of the opinion that this is not so important. I have used Chinese twist, floss silk, fascia lata, buried nylon in the form of a filigree, and even skin strips. It is the method of repair that counts and not which suturing is used.

Lastly, I should like to mention one other point which I consider important in order to prevent recurrence. This is to alter the course of the cord after it emerges from the internal ring. Normally the cord after its emergence passes down the canal medially and caudally. It is advisable, I consider, to make the cord pass upwards and laterally before passing downwards and medially. In this way a hernia, should it attempt to recur, finds its path of exit from the internal ring more difficult. I learnt this tip from Mr. Rodney Maingot, and I think the principle of it is very sound.—I am, etc.,

London, W.1. MAURICE LEE.

Old Age and Calories

SIR,—Among the problems connected with the subject of old age there is one that seems to me worthy, so far as possible, of special investigation. I refer to calorie value of the diet during the prime of life. It has been suspected that a very high calorie value—especially excess of meat—tends to shorten life, death

occurring at between, say, 60 to 70 years of age instead of between 70 and 80. It would be very interesting if dietetic investigations could throw light on this subject. Even during my life-time habits seem to have changed considerably, much less meat being consumed by well-to-do men in the prime of life (I refer, of course, to ordinary times of peace). The metabolic and excretory organs (especially the kidneys) are presumably less constantly overworked, and maintain their proper functional activity to a later period of life; this may partly account for the modern increase of old persons with normal mental powers.

Is there any reason for endeavouring to increase the number of old persons? Yes, I think so. One of the chief advantages of healthy old persons in a community consists, I believe, in their accumulated knowledge and resultant *doubt*. "Doubt grows with knowledge" (Goethe), and knowledge *should* increase with age. Old persons, owing to their knowledge and doubt, should be less prone than the young to that kind of "fanatical certitude" which provokes enmity, aggression, and war.

As to the effects on the chances of longevity of a relatively low calorie value of diet during early and middle life very little is, I believe, known, though unfortunately, especially at the present time, much is known about the immediate disastrous results of grave undernutrition.—I am, etc.,

London, W.1. F. PARKES WEBER.

Artificial Respiration

SIR,—Prof. R. R. Macintosh and Dr. W. W. Mushin (June 15, p. 908), comparing the efficiency of different methods of artificial respiration, state that too much stress has been laid on details and not enough on essentials, such as a clear airway. They say that the choice of method is relatively unimportant. This is true, with one qualification—that the method is properly carried out. This sounds foolishly obvious, but there is one method which is often used badly and inefficiently.

In respiratory failure during or after anaesthesia the patient is normally lying on his back and the most convenient method is Schäfer's (direct pressure on the chest). If this pressure is applied too low, which is a very easy mistake if the surgeon is doing it from his normal position, it falls entirely on the liver and the effect on the lungs is practically *nil*.

Illustrative Case.—A stone in the ureter was removed from a soldier in a German prisoner-of-war hospital. He stopped breathing after his return to the ward. The cause was probably the combined depressant effects of morphine, evipan, and ether. (The only available apparatus for dealing with these tough male adults was an open ether mask, which is rather like shooting elephants with an air-gun, so we often gave undesirably large doses of preliminary drugs.) It was not my case, but I was called in. I found the surgeon energetically using Schäfer's method, but no air was entering or leaving the lungs. Putting in an airway made no difference. The oxygen apparatus arrived from the theatre at this moment. Now the German Army portable *Sauerstoffgerät*, though fitted with multiple breathing tubes and face-pieces for treating four patients at once, has no provision for giving oxygen under pressure. The bag of the apparatus confirmed the absence of pulmonary ventilation. So, telling the surgeon to do a rapid wash-up for a cardiac massage, I continued the artificial respiration by pressing with one hand on the sternum. This immediately caused a free flow of oxygen in and out.

The anaesthetist's normal position at the patient's head makes it practically impossible for him to make the mistake of pressing too low down. Pressure on the lower ribs may be all right if the patient is lying prone, but it is certainly useless when the patient is lying on his back. It would be interesting to have this point confirmed by spirometer readings during anaesthesia.—I am, etc.,

Leeds. W. STANLEY SYKES.

The Catheter and the Prostate

SIR,—The letters from Dr. Seymour Edelman (June 1) show that the abstract of my paper was too condensed to be lucid. The acute prostatic retention should be operated upon as an urgency and the pain immediately relieved by morphine; or, if the waiting interval is too long—as in a patient who travelled last week from Devon to Manchester—by the suprapubic insertion of an aseptic lumbar-puncture needle attached by a rubber tube led into a sterile bottle. These methods are less painful than catheterization and do no damage to the delicate urethra. The preparatory chemotherapy is intramuscular.

There are no more misleading statistics in medicine than those in connexion with prostatectomy. I refused to operate upon 8 out of 573 cases (1.4%), and there were no pre-operative drainage deaths because I do no pre-operative drainage. This suggests a higher standard of operability than any yet recorded. Mr. H. P. Winsbury-White (June 1) refused (so far) at least 18 cases out of 113 (15.9%). If one were to pick one's cases I presume that the mortality might be *nil*. Mr. Clifford Morson (June 8) makes comparisons between my figures and those of the late Sir Peter Freyer which are misleading because they are incomplete: he is unaware of the number of cases Freyer refused and left to die, but he is well aware of the appalling mortality of simple suprapubic drainage in those days, before even slow decompression came into practice. Until we know the numbers of cases refused, the mortality of the preliminary drainage, and the ultimate after-condition of the patient, we can form no opinion of the value of the various methods of prostatectomy; and the simple prostatectomy mortality figures with the pre-operative drainage mortality statistics concealed are valueless. If Mr. Winsbury-White will do his prostatectomies aseptically he will see absolutely clear urine every day, though not in every case.

My removal of the greater portion of the trigone is described as a "physiological mutilation of the trigger of micturition." Well, I do not know of any old man, passing urine many times at night, who would not be glad to get rid of his "trigger." I strongly suspect that the absence of the trigone is the reason for the lesser frequency of micturition after my operation than after those done by me by the retropubic route.

History will show that the catheter and suprapubic drainage, and the shibboleth of slow decompression, have put back the clock of prostatectomy by thirty years, and have caused the birth and spread of septic transurethral resection with its imperfections and complications.—I am, etc.,

Manchester. WILSON H. HEY.

SIR,—The mortality rate for simple suprapubic cystostomy in my recently mentioned prostate cases was 2 in 73 cases (2.7%) not 11.1%. Dr. Terence McCall (June 15, p. 931) seems to have overlooked the 55 cases of cystostomy which proceeded later to the second stage of prostatectomy.—I am, etc.,

London, W.1. H. P. WINSBURY-WHITE.

Treatment of Sterility in Women

SIR,—Many women are now seeking help because of sterility, and the investigations of this complaint have now reached a high standard of efficiency, but is it possible that the investigation is outdistancing treatment? I find that patients all over the country are having their tubes inflated or made opaque by lipiodol, and then being sent away under the impression that pregnancy will shortly follow. Surely all the gynaecologist can say after such a manœuvre is, "Provided I have not done any damage, you are just the same as you were before." It is amazing how many people seem to forget that the operation of dilatation of the cervix is still the most important factor in the treatment of sterility.—I am, etc.,

Leeds. DAVID CURRIE.

Notification of Venereal Disease

SIR,—A full system of notification and compulsory examination and treatment, as Dr. C. M. Ockwell (June 15, p. 929) reminds us, still awaits official acceptance in this country. Although Regulation 33B is an inadequate compromise, its introduction implies Government recognition of the need for compulsion in certain circumstances. This Regulation has proved useful, but its value in V.D. control could be augmented greatly by extending its provisions so that official action could follow the receipt of one notification. This step would, in my opinion, be more simple and effective than seeking the inclusion of the venereal diseases among the notifiable infectious diseases referred to in the Public Health Act.—I am, etc.,

Ipswich. S. M. LAIRD.

Industrial Medicine

SIR,—Whatever views may be held on the merits of artificial sunlight in industry, surely no informed person will claim that physical methods are anything but ancillary to the more radical methods of preventing sickness and absenteeism to which you refer in your leading article (June 8, p. 882). The primary function of industrial medicine is research, directed to the detection and elimination of industrial hazards.—I am, etc.,

Derby. GERALD F. KEATINGE.

Psychology in the Child's Education

SIR,—The letter from Dr. E. Stungo (June 15, p. 930) stimulates me to make comment. We can easily agree that children are the citizens of the future and deserve the best we can give them, but why is it that when we start planning we so easily start on the wrong foot?

The main suggestion in the letter is to the effect that children should be taught as the Nazi children were taught, only taught citizenship. How easy to say, and how difficult to put into practice! Dr. Stungo leaves out the real source of good citizenship, which is in the life of the child in his own home, including the first relationship, that between infant and mother. On the basis of a good first relationship, more complex relationships can be developed gradually at home, and if all goes well the wider world is approached through the family's external relationships. If these things fail, citizenship (or something else) has to be taught, and a job it is.

If doctors are to interest themselves in this business of producing citizens they can start immediately by refraining from all avoidable interference with infants and small children. Neither should any physical treatment be undertaken that can *possibly be avoided,* nor should infants and small children be taken from home except in case of dire necessity. Small children in hospitals should be visited so frequently that they never cease to be sad, which means that they do not lose the thread of home life; and they should be sent home as quickly as possible. Moreover, there should be a stop to the general practice of taking over responsibility from parents who would like to retain responsibility: it is possible to give help without in any way making parents feel they are not fit to act on their own judgment.

Doctors and psychiatrists should remember that parents and teachers cannot wait for psychology to get to know everything. Parents and teachers have to deal with whole problems, and this is specially true of mothers with their infants. We understand some very important things about emotional development, but there is very much we do not yet know, or but dimly see. Let us not imagine we can tell a mother how to be a mother or a teacher how to teach. We can help each to understand this and that, and we can make their mothering and teaching jobs more conscious and more interesting; but all the time parents and teachers will have to carry on intuitively and without being able to account for all that they do.

Dr. Stungo says "children learn something of love, charity, sacrifice, humility, modesty, good and evil from religious instruction . . . they should be taught to appreciate the nature of hate, envy, greed, spite, guilt, and temper. . . ." In my opinion children know more about all these things than we do, and we could spend our time letting them teach us with a good deal of profit.—I am, etc.,

London, W.1. D. W. WINNICOTT.

SIR,—Dr. E. Stungo deserves credit for drawing attention to educational affairs of utmost importance, both national and international. Surely, the medical profession must not lose sight of its long-established educational function within the community. While child psychiatrists will find themselves in hearty agreement with the general line of Dr. Stungo's striking observations and far-sighted demands, there are, on the other hand, some points in relation to his statements which require further elucidation. Modern child psychology distinguishes certain "phases" in the normal development of the child, each of them having great biological importance. It is, therefore, not quite appropriate to use the slogan "A child ought to be taught . . ." unless one refers to a certain phase or age in the child's development. Unfortunately, this point of view has been omitted from Dr. Stungo's remarks. There are phases in the child's development in which psychological enlightenment in the sense of training would be entirely out of place. Nature has provided the child, for a certain span of his life, with a precious gift—viz., "naivety" (but for processes in his unconscious). It would be unwelcome to all concerned to deprive the child of this gift by guiding him towards precocious introspection and assessment of "fellow men." Child psychiatrists know how often the untimely destruction of a child's naivety by events in his home—or outside it, for that matter—can lead to a neurotic development. I had to utter a similar warning a few years ago, when a psychologist in a book on children's development recommended some sort of "confession," which the child had to make every night to his father or mother sitting at his bedside, on wrongs he had done during the day. It should be realized what a "neurotizing" effect a surplus of introspection at an early age can have. No harm can be done by guiding children aged 10 to 13 to a correct and alert observation of people, by ways and means for which the Boy Scout system can be an example. The first approach of the child to "systematic" psychology should be, to use a modern term in psychology, "behaviouristic." With the approach of puberty the child becomes naturally introspective and at the same time very much concerned with the motives of people's actions and conduct. It is at this stage that terms of structural and deeper psychology can be brought, gradually and unobtrusively, to the child's mind. This is the age in which, as Dr. Stungo rightly expects, the endeavour to understand other groups and nations should find a fertile soil.

Some of Dr. Stungo's remarks are directed against "frustration" in the child's life, created by competitive systems in education. It is not frustration itself which is noxious or to be feared, but a surplus or an overwhelming intensity of it. Without frustration the development of a child's character would be as "shallow" as an adult's development without inner conflict.

The most practicable part of Dr. Stungo's remarks is where he speaks of the teacher's training in child psychology. That teachers should be trained, in addition to the facts of normal development, also in the recognition of developmental difficulties and behaviour disorders, just sufficiently so as to guide those children into the proper medical channels and to co-operate in their treatment, cannot be enough underlined. The best solution would be to allot some time in the curriculum of trainee teachers to such child psychiatrists as would be willing to co-operate in a direct way within the educational system. It can be safely said that while our age and society tend to exclude waste in every possible sphere, the sphere where most waste and frustration is still tolerated is that of psychic economy and mental hygiene. Surely, if society wants to overcome this state and to prepare for an age of better social adaptation, new ways must be found in order that new sap, provided by medical knowledge, may reach the roots of our educational system.—I am, etc.,

Virginia Water. STEPHEN KRAUSS.

The Health Bill and Medical Research

SIR,—I have read the contents of the White Paper and the various Parliamentary debates connected with it, and can find no reference to that fountain-head of medical progress—namely, medical research. This is the more surprising since vast sums of money have been pledged to atomic research and other destructive agents, and I can find no mention of similar sums being set aside for the saving of human life in the field of preventive medicine and associated research. In fact I quite agree with Drs. Hilton and Luntz (June 1, p. 850) that the only available sums amount to some £215,000 per annum for the whole of the British Isles.

It is popularly assumed by Parliamentarians and public alike that anyone can undertake medical research. This, I maintain, is far from the truth: a trained research worker is very much like a judge, and requires much the same mental outlook. Just as a judge requires a comprehensive knowledge of the law so the trained research worker requires a vast knowledge of comparative medicine and, in addition, a comprehensive knowledge of international research literature. In preparing his paper he has to act not only as counsel for the prosecution but also as counsel for the defence, and jury, and, by mental cross-examination, build up his thesis or "summing up."

I can well foresee the time when those who spend some time on unpaid medical research will, when the Bill is made law, drift into the more secure and more lucrative harbours of a full-time salaried appointment under the State, and medical progress will retrogress.—I am, etc.,

Northampton. JOHN H. HANNAN.

"A Doctor's Charter"

SIR,—Dr. Edith Summerskill, addressing the Labour Party Conference, is reported to have described the Health Service Bill as a "charter of liberty for the medical profession," explaining that "in future no doctor need prostitute his science by pandering to the hypochondriac." I suppose that in the circumstances in which she made it this astounding statement was taken for sober truth, and raised not even "cries of 'Oh.'" The *Times* has had the grace to print a well-deserved comment on it by Dr. Alfred Cox, but even his letter does not, I think, do full justice to its extreme perversity. I can imagine situations in which it might be genuinely difficult for a doctor to rid himself of an unwanted hypochondriac. A Lord of the Manor or popular trade union leader or, in future, a chairman of a Regional Board, if thus afflicted, might, in an over-organized community, be hard to shake off without undue loss. But such cases, if they occur, can scarcely be affected by an Act of Parliament. What matters is not the exceptional but the ordinary hypochondriac.

In a community of free individuals accustomed to pay direct for medical attention nothing is easier than to avoid this "prostitution of medical science." A lifted eyebrow, a well-judged silence, a lack of enthusiasm for the latest thing in therapeusis and the bird will fly. Moreover, the bird is gregarious, and others of his feather or hers will fly too or keep away. In the conditions of free private practice such patients can be collected for investigation and treatment or avoided at will. Plenty of work of other kinds and a decent livelihood remain for those of us who prefer to avoid them; doctors and patients alike tend at least to get what they desire and, it may well be, what they are most fitted to do or to receive.

But when every hypochondriac has already paid his fee by way of compulsory contribution; when he has a right to "the best" for the asking and is officially urged to take every "early symptom" to the doctor forthwith; when he may be allotted by a committee to a reluctant practitioner deprived of the right to raise his fee or to request the patient to choose another doctor; then I fear, if we enter the service, we shall learn what it is to be at the mercy of these unhappy but exhausting folk. Or if, following Dr. Summerskill's lead, the whole service steels its heart so that they cannot get "'twixt the lawful sheets" the recurrent investigations and treatments their souls desire, then must arise a medical or quasi-medical "black market" hitherto unknown, and in that market medical science will indeed play the prostitute.—I am, etc.,

Hampstead, N.W.3. LINDSEY W. BATTEN.

Health Service Bill

SIR,—I am certain that a large number of medical men must feel, as I do, increasing apprehension at the present policy of the B.M.A. with regard to the new health Bill. However you may look at it, organized refusal to work the Bill is a strike, and it is just because I am a lifelong Conservative that the idea of a direct action strike against the Government of the day is repugnant to me, and I, personally, will take no part in it, however much I disapprove of the Government's policy. Such a strike, reprehensible enough when undertaken by miners, transport workers, etc., is doubly so when threatened by an educated section of the community like the medical profession.

There is now little doubt that the great majority of the people are in favour of the Bill, and doctors who think otherwise are merely indulging in the good old habit of "wishful thinking." The people frankly do not understand what the doctors are making a fuss about, but the seeds of suspicion are being sown that the doctors are intent on getting their money to the exclusion of everything else. Let us do all we can by constitutional means to get what we consider to be the best conditions for all concerned, but do let us stop these foolish threats to strike which are rapidly bringing the profession into disrepute.—I am, etc.,

Diss, Norfolk. J. V. DOCKRAY.

SIR,—I am one of the many doctors who view with misgiving the Government's proposals for a National Health Service, but I have been almost converted in its favour by the pamphlets recently published by the B.M.A. for distribution by doctors to their patients.

Space will permit mention of only the grosser absurdities in these circulars. In one of them the following underlined statement appears: "*Under the National Health Service Bill your doctor may be told how to treat you by Government circular.*" Does any intelligent person believe that such a possibility exists and is there any justification for the suggestion? In the Forces, to which disparaging reference is made in another circular, it is true that "directives" were issued from time to time, as well as the eagerly read Army Medical Department Bulletins. Both of these contained advice on treatment based on current experience over a wide field; to that extent they indicated "how to treat" the patient. So far as I remember they never *ordered* a particular line of treatment. They did, occasionally, order a certain line of investigation, and sometimes put a ban upon treatment that accumulated experience had shown to be highly dangerous. It may be suggested that not a few patients might have been spared a good deal had their doctors been "told how to treat" them in this way.

In another pamphlet statements by Sir William Beveridge and the Government actuary are quoted, and the reader is asked to "note the distrust of the doctor shown" in them. Both statements emphasize the necessity for a high standard of certification, and one suggests that "there may be a tendency on the part of doctors to require longer periods off work" for their patients. Are we, then, so thin-skinned—or is it a sense of guilt—that we wince at the mention of "careful certification"? And does not experience of the working of N.H.I. suggest that the Government actuary's fear of "longer periods off work" is, at least, well founded?

Finally, a paragraph of barely veiled innuendo referring to doctors in the Forces ends with the sentence: "The task of the Forces doctor is to make all ranks fit for duty and to protect the pensions fund." Success in the second of these tasks follows largely upon success in the first, and both seem to be eminently desirable. If a National Health Service can bring about such a happy state of affairs, then the sooner it is in force the better.—I am, etc.,

Newcastle-upon-Tyne. A. ANGUS.

Assistants and the Bill

SIR,—In my letter (June 1, p. 847), I listed five general respects in which the introduction of an assistant into a practice conflicts with the so-called Principles of the profession. Now, although these items clearly relate to matters of fact, Dr. R. McIntosh (June 15, p. 928) endeavours to convince us that they are subject to a vast difference in point of view which he assumes exists between him and myself. Although for some reason he presumes that I have a sordid conception of the relations between principal and assistant, it would appear that his views on that matter are the same as mine. I entirely agree with his three classes of assistants, and join with him in his wholehearted condemnation of the "grasping principal." He had absolutely no excuse for any assumption to the contrary. I can only suppose that he found nothing to burn in my letter and so had to resort to this rather doubtful method of producing a guy upon which to release the heat of his annoyance.

Having survived this burning in effigy, may I be permitted to restate the fact that, for whatever motive an assistant is employed, it is customary for conditions of his employment to run contrary to the recently adopted Principles of the profession. In fact, at the outset an agreement is usually signed which gives the employer powers of direction far beyond anything contemplated in the present Bill. Another constant feature of such agreements is the acceptance of a salary by the assistant and an undertaking that the doctor employing him shall receive all the assistant's earnings. Both parties are in fact prepared to abandon the precept that remuneration shall be proportionate to effort. While still leaving my views on this doctor–assistant–patient relationship to the guesses of Dr. McIntosh, it may be said that for the most part it is a necessity under the present system. However, my purpose was not to criticize this relationship but to examine its apparent incompatibility with the Principles.

It is obvious that any doctor fundamentally convinced that both salaried service and direction were bad would not be party to any agreement involving any infringement of these Principles. Then one must ask how has it come about that doctors who for many reasons have employed assistants under conditions conflicting with the present avowed Principles of the profession are among those now upholding these Principles when the Government threatens to ignore them to a comparatively slight extent? I am of the opinion that this paradox arises out of some confusion in the interpretation of the word "principle." The Principles are in fact a codification by the B.M.A. of our present relationship with the public, and are put forward by those who are against fundamental change as the frontier upon which they are prepared to stand and fight. That attitude may be unreasonable or hopeless, but it is not necessarily at all dishonest. The latter element is being introduced by those who attempt to invest the Principles with a generalized and almost sacred significance, which is incidentally incompatible with any desire to uphold or retain the present doctor–assistant–patient relationship. To avoid charges of dishonesty doctors should therefore take care to distinguish between the principles of the profession and the recent codification of the Principles of the profession's present struggle against changes involved in the Bill.—I am, etc.,

Eye, Suffolk. J. SHACKLETON BAILEY.

Artificial Sunlight in Industry

SIR,—Dr. Schmidt (June 8, p. 890) criticizes my comment on his statement that ultra-violet irradiation had reduced sickness absence in a colliery by 18%. He based this conclusion on the fact that in the year in which treatment was given at one colliery, Kirkby (Notts), there was 18% less sickness than in the previous year, when there was no treatment, while at one other colliery, where there was no solarium, the rate actually rose. From these facts Dr. Schmidt deduced that the ultra-violet treatment was responsible for the improvement at Kirkby.

Dr. Schmidt is mistaken in thinking that in quoting his figures I compared the "absolute mean sickness figures" of the two collieries. My argument was that, as the sickness absence rates in the two were very different in the year before the irradiation started, a comparison of the changes in their rates in the two years was not valid. Yet Dr. Schmidt based his conclusion on this comparison. He did not ascertain, by a study of the health records of a control group of unirradiated men selected at random within the Kirkby Colliery, whether influences other than the irradiation had caused or contributed to the drop in the sickness rate. Dr. Schmidt argues that each colliery has its own features regarding absenteeism, that some have high rates, and some have low. That may well be true, but he goes on to say that these "general characteristics remain fairly irrelevant" when trying to judge the influence of one specific factor—i.e., the solarium treatment. But his comparison of the *changes* in these rates depends entirely upon this assumption of irrelevancy. He gives no evidence that from year to year these general characteristics do invariably remain constant and that there are no yearly variations in sickness absence due to the underlying causes he mentions.

To what extent do they occur in the absence of any specific form of treatment? Extension of such observations in space and time might strengthen his case by showing that in different collieries at different times a fall in absenteeism invariably followed solarium treatment. He merely offers a single comparison, and it is obviously impossible to deduce cause and effect from it. On the other hand, Dr. Schmidt might have given more convincing evidence if he had used an adequate control group with the Kirkby Colliery, for it is possible to draw certain reliable conclusions from a relatively limited inquiry which is well controlled. When experimental conditions are less favourable—as, for example, when comparison is made between one period of time and another, or between groups of subjects living in different environments—the observations must be far more extended.

Far from being "lost in a jungle of statistics," I was fortunate in having the guidance of experts both in the planning and in the interpretation of my experiments.—I am, etc.,

London, W.6. DORA C. COLEBROOK.

Judicial Responsibility of the G.M.C.

SIR,—In the report (*Supplement*, June 8, p. 165) of the Summer Session of the G.M.C. the President, after announcing the restoration of the name of Dr. Hennessy to the *Register*, is reported to have said that he had been asked by the Council to add a few words. "A judge of the High Court (Mr. Justice Charles), in a judgment delivered by him on April 12, 1946, had intimated that the Council 'not having the advantage of the great mass of evidence that had been put before him and which was not put before them,' had 'in the absence of adequate evidence (and they could only deal with the matter on the evidence before them)' come to a conclusion adverse to the practitioner which had resulted . . . in a gross miscarriage of justice." The President continued: "But I must emphasize that it is imperative in all inquiries held by the Council under Section 29 of the Medical Act, 1858, that an accused practitioner should call before this Council all material and relevant evidence in support of his case. *If he neglects to do so, it is at his own peril*" (italics mine). "This Council can only deal with any case on the evidence before them. If there is evidence that is relevant and that could be adduced on behalf of the practitioner and is not so adduced, the responsibility of any adverse view by the Council *must rest with the accused practitioner*" (my italics).

I would make the following observations: (1) Evidence given before the G.M.C. is not given on oath and is not evidence in a legal sense. (2) Neither the Council, the complainant, nor the accused practitioner has the power to subpoena witnesses, and it follows that even the unsworn evidence may be incomplete (and a material witness may be unwilling to attend to give evidence because of the time involved in travelling and attending the hearing or a wish not to be "mixed up" in a case). (3) In view of the foregoing, the statement of the President that "an accused practitioner should call before the Council all material and relevant evidence in support of his case" (presumably this means his defence) "and if he fails to do so it is at his own peril," is nonsense, and is all the more disquieting in that it is, presumably, a considered statement, and emphasizes the need for the judicial activities of the Council to be placed in the hands of a trained lawyer, who could sit, if need be, with a medical assessor (similar to the procedure in Admiralty cases). Let the cobbler stick to his last.—I am, etc.,

South Shields. TERENCE G. ROBINSON.

SIR,—The President of the G.M.C. says that an accused practitioner should call all material and relevant evidence in support of his case; if relevant evidence could be adduced and is not, the practitioner is responsible for an adverse view of the Council. But what if the necessary witnesses will not come? Neither the Council nor the doctor can compel them to. Until the Council is given power to subpœna witnesses, and obliged to do so on the motion of the respondent doctor, its disciplinary proceedings will continue to fall lamentably below any reasonable standard of justice.—I am, etc.,

London, S.W.19. D. H. KITCHIN.

SIR,—May I express in your columns my support of, and gratitude to, Dr. R. V. Goodliffe, on his plain and decisive exposure of the G.M.C. President's complacent statement about the Council's recent gross injustice to a medical practitioner. That statement does mean: "We presume and hold you guilty until you satisfy us of your innocence."—I am, etc.,

Albert Dock Hospital. H. M. HANSCHELL.

For two years the American-Soviet Medical Society has been publishing the *American Review of Soviet Medicine*. Arrangements have now been made for publication in this country. The first number of the British edition includes articles on: anaerobic infection of the brain; the role of vitamins in the pathogenesis and treatment of skin diseases; observations on the pathogenesis of hypertension; cyclodiathermy in secondary glaucoma; permeability of the haemato-encephalic barrier in massive arsenotherapy; immunization of diphtheria carriers; and "agonal states and clinical death." The publisher is Philip Firestein, 82, King Edward's Road, Hackney, E.9.

Obituary

PETER McBRIDE, M.D., F.R.C.P.Ed.

Dr. Peter McBride, the veteran Scottish laryngologist who was for many years head of the ear and throat department of the Edinburgh Royal Infirmary, died on June 16 at St. Peter's Grove, York, where he made his home after spending some years in retirement at Harrogate.

Born on Aug. 16, 1854, son of James McBride, he went to school at Clifton College eight years after its foundation, and took his medical course at Edinburgh University, graduating M.B., C.M. in 1876; he was elected F.R.C.P.Ed., in 1880, and in the next year proceeded to the M.D., after attending clinics in Vienna to study diseases of the throat and ear. On his return to Edinburgh he was appointed to the staff of the Eye, Ear, and Throat Dispensary and began to lecture on diseases of the throat in the extra-mural School of Medicine. In 1883 he took charge of the new department for ear and throat diseases at the Royal Infirmary (where he had been resident physician) and held that position for twenty years, during the last five of which he was university lecturer on otology, rhinology, and larynology. In recognition of his great service in building up the department he was made consulting surgeon in 1904.

Peter McBride was honoured by his fellow specialists far beyond the borders of Scotland. He had been president of the Larynological Society of London, was twice president of the Section of Otology and Larynology at Annual Meetings of the British Medical Association, and president of the Otological Section of the Royal Society of Medicine for two years; he had also been vice-president of the Otological Society of the United Kingdom. He was an honorary member of the Scottish Otological and Laryngological Society, corresponding member of the Berlin and the Vienna Laryngological Societies, and of the French Otological, Rhinological, and Laryngological Societies, also a corresponding Fellow of the American Laryngological Association. Three years after his retirement from active professional work he gave the Semon lecture in laryngology at the University of London in 1913.

In the course of a long life he wrote much. His *Guide to the Study of Ear Disease* came out in 1884, his *Diseases of the Throat, Nose, and Ear* reached a third edition in 1900, and he contributed many papers on affections of the ear, nose, and throat to medical journals; he had also translated Gottstein's *Diseases of the Larynx* in 1885. His miscellaneous writings included *Philosophy of Daily Life* (published under the initials "E. C. M."); *Psycho-Analysts Analysed* (1924); the *Riddle of Personality* (1926); the *Philosophy of Sport* (1932); and *Doctors and Patients: An Aid to Mutual Understanding* (1933). Keenly interested in outdoor and indoor sports and games Peter McBride loved a day with the hounds, and often hunted during his early years of retirement in Yorkshire. He had been a member of the B.M.A. continuously for 66 years.

H. G. EARLE, LL.D., M.B.

Dr. B. S. PLATT, Director of the Human Nutrition Research Unit, writes:

In the spring of 1941 Dr. Earle left his wife and family in England to return to Shanghai to his post as Director of the Henry Lester Institute of Medical Research to face the difficulties and dangers which he must have known were about to come to a head in the Far East. His action was in keeping with a high-minded sense of duty which characterized the care which he gave to the Institute he had nursed from its birth. In the same spirit he stayed on after his release from internment in Lunghwa Civil Assembly Centre at the end of the war with the Japanese. Although he had, by the end of the war, ceased to be Director of the Institute, he no doubt felt that he must do what he could to try to get it on its feet again. He must have suffered in mind during internment at the stupidity and waste of war, in spite of his naturally calm and philosophic outlook on life; for he loved peace and lived for the improvement of the lot of mankind. There can be little doubt that but for his sufferings undergone during the war he would have returned to a place of esteem and affection in medical circles in this country.

Dr. Earle had been adviser to the Henry Lester Trust since 1926. The Institute staff began to assemble in 1927 and grew in size and achievement till the outbreak of the Sino-Japanese war in 1937, when its activities had to be considerably curtailed. Nevertheless, the annual reports from 1934 to 1940 are records of additions to knowledge over a wide field of medical research. His policy as Director was, to use his own words, "to stress the view that disease is a general biological problem and that all medical research should have a fundamental philosophical background if it is to be intelligently pursued." The loss of his wisdom and experience will be felt especially in China in the difficult period of rehabilitation ahead.

We regret to announce the sudden death on June 7 of Dr. JOHN DUKE STEWART, the well-known Dundee anaesthetist. He graduated M.A. of St. Andrews in 1915 and M.B., Ch.B. in 1921 and obtained the English D.A. in 1935. The following tribute comes from two colleagues: The tragic death of Dr. Duke Stewart has come as a shock to the people and medical profession of Dundee, where his services as anaesthetist were widely sought. For some years he had devoted himself entirely to the practice of anaesthesia and had recently been appointed lecturer on anaesthetics in the University of St. Andrews and promoted senior anaesthetist in Dundee Royal Infirmary. His keen interest in and knowledge of the subject, his patience and skill in the teaching of students, and his study of the problem of the individual patient pre-eminently fitted him for these responsible posts. Dr. Duke Stewart was particularly interested in the question of premedication and published a paper on this subject in the *British Journal of Anaesthesia* in 1939. He was a member of the B.M.A. and contributed articles to the *B.M.J.* Dr. Stewart was a Fellow of the International Anaesthetic Research Society and a member of the Scottish Society of Anaesthetists and of the Association of Anaesthetists of Great Britain and Ireland. Not only was his work known in the United Kingdom, but in 1941 he was elected a Fellow of the International College of Anaesthetists of U.S.A., and earlier had been invited to visit the United States to address the Society of Anaesthetists, but was prevented from accepting this honour by the outbreak of the war. The sudden death of one who gave such devoted service is a great loss and will be felt not only in Dundee but throughout the East of Scotland. Our deepest sympathy is offered to his widow and son.

News has been received of the death on June 14 at Berea, South Africa, after a long illness, of Dr. HENRY CURWEN, formerly principal medical officer of Zanzibar. Born in 1879, son of Robert Ewing Curwen of Frome, Somerset, he was educated at Trinity College, Glenalmond, and Edinburgh University, graduating M.B., Ch.B. in 1903 and taking the D.P.H. of Durham two years later. He was appointed senior medical officer for Zanzibar in 1907 and became P.M.O. to the Zanzibar Government and Protectorate in 1915. On his retirement in 1922 he was created C.B.E., and received from the Sultan the 4th Class of the Order of El Aliyeh and the 2nd Class of the Order of the Brilliant Star of Zanzibar. Dr. Curwen represented his Branch at the Annual Meeting of the B.M.A. at Newcastle-upon-Tyne, and in later years held the post of medical superintendent of Kokstad Hospital, Griqualand East, Cape Colony.

Dr. VICTOR G. L. FIELDEN, who died recently, was consulting anaesthetist to the Royal Victoria Hospital, Belfast, and to the Ulster Hospital for Children and Women. He graduated in medicine at the old Royal University of Ireland in 1892 and obtained the M.D. with gold medal of Queen's University, Belfast. During the war of 1914–18 he held the temporary rank of captain, R.A.M.C., attached to the Queen's University O.T.C. He joined the B.M.A. in 1895 and was secretary of the Section of Pharmacology and Therapeutics at the Annual Meeting held in Belfast in 1909. Prof. P. T. Crymble writes: Victor Fielden was born in 1867 at Plymouth. His father was in the Royal Navy, and the son looked more like a naval officer than a doctor. He was a man of magnificent physique; over six feet, perfectly erect, he did most of his practice on a bicycle, and thought little of riding 25 miles to the seaside to see his family. Starting as a pharmaceutical chemist he followed the example of his chief, Sir William Whitla, and became a doctor. Almost immediately he started to specialize in anaesthetics, and for fifty years was our leading anaesthetist. Beginning with the Junker and bellows method he changed later to the Vernon Harcourt apparatus and continued to use this up to 1945. He proved that chloroform given in this way was an exceedingly safe method. In the University he taught practical pharmacy, and many stories are told in connexion with his classes. He formed a link with the past and could give a vivid description of operations performed under the carbolic spray. My own earliest recollection of Fielden was of seeing him simultaneously anaesthetizing and correcting proofs of Whitla's textbooks. Later he became my close personal friend

and did all my abdominal anaesthetics up to 1945. For many years he was a bellringer in St. Thomas's Church and gave long service to the Balmoral Reformatory. He had a very happy family life with a wife, a son, and five daughters.

We regret to announce the death of Dr. EDMUND ALBERT GOULDEN at Dymchurch, Kent, at the age of 76. He graduated in medicine at Manchester in 1893 and took the M.D. in 1905. The earlier part of his professional life was spent at Stockport, where he built up a large and busy practice. He served as captain in the R.A.M.C. in the 1914–18 war. He went through the hardships and horrors of the Gallipoli campaign and there developed cardiac trouble, which persisted to the end. At the close of the war Dr. Goulden went to Llandrindod Wells and practised as a spa physician until his retirement, owing to failing health, three years ago. He was an able physician and had a forceful and kindly personality. His death has been keenly felt by a wide circle of friends and patients. He had been a member of the B.M.A. since 1902.

Medico-Legal

ANOTHER CARBACHOL ACCIDENT

In June, 1942, a flight-sergeant of the R.A.F. died of an overdose of moryl, otherwise called doryl or carbachol, in the Cowley Road Hospital, Oxford. At the inquest[1] it appeared that the drug used had been packed in ampoules in crystalline form. Each ampoule contained a quantity of drug about 400 times the therapeutic dose. The instructions sent out with the ampoules said that the correct dose was 1/2 to 1 ampoule, but this referred to ampoules filled with solution and not with crystals. In 1944 the personal representatives obtained £2,000 damages from Messrs. Savory and Moore, the manufacturers, for negligence.[2] The manufacturers took steps soon after the accident to call in the blue packages containing moryl crystals, but a packet remained at the Croydon General Hospital, and the accident was substantially repeated on April 18 last. A married woman who had been admitted with cancer and a very rapid pulse was given the contents of an ampoule, 0.1 g. of the crystals, dissolved in sterile water. The correct dosage was 0.00025 g. She died in a few hours.

At the inquest Dr. H. G. McComas said that soon after the patient's admission he had instructed Dr. Maureen McNeill, the house-physician, to give one ampoule of moryl. Later she telephoned to him to say that the patient had died. He had examined the empty ampoule and the box from which it came, which had contained a blue paper saying that the dosage was 1/2 to 1 ampoule, to be repeated if necessary three or four times daily. Cross-examined, he said that he had seen the box before ordering the injection, and had seen that the ampoules contained crystals, but as he had never used the drug before, this fact did not strike him. It had never entered his head that the dosage on the box did not correspond with the contents of the ampoule. Dr. McNeill said that she also had not used moryl previously but had followed the directions of the blue paper in the box, which had corresponded with Dr. McComas's instructions. Mr. Samuel H. Stephenson, chief chemist of Messrs. Savory and Moore, said that the crystals, containing the drug in pure substance, were marketed for ionization. Tablets were prepared for administration by the mouth, and watery solution for injection. The firm's records showed that the hospital had ordered the box, containing 3 ampoules of 0.1 g. each, by telephone in December, 1940. Among other hospitals, Croydon General Hospital was asked by telephone to return the drug but had not done so, and the firm had presumed that it had been used. He agreed that the blue paper contained no word about the uses of the substance, and that the instruction did not apply to the contents of the ampoule. He thought, however, that members of the medical profession would have known this, for crystals could not be injected as they were. The jury returned an open verdict.

Medical journals have printed letters from the firm stating that it had called in the blue package containing moryl crystals and reissued the drug in an entirely new packet with a new colour scheme and literature. In case some hospital dispensaries may still have crystalline moryl with misleading directions, it is worth while to repeat the firm's request to examine their stores and return any moryl crystalline substance in the blue packet for free exchange.

[1] *British Medical Journal*, 1942, **2**, 28.
[2] Ibid., 1945, **1**, 62.

Medical Notes in Parliament

HEALTH SERVICE BILL

In the resumed Committee stage on June 18 Mr. SOMERVILLE HASTINGS said that Clause 26 suggested that every general practitioner should be free to carry out inoculations against diphtheria. He felt that was undesirable on medical grounds. There was no objection to every medical practitioner undertaking vaccination, although the Government in times past designated certain practitioners as public vaccinators, but inoculation against diphtheria was a different story. Intradermal inoculations were not easy to carry out, nor were the Schick tests and the re-testing. Mr. LINSTEAD asked why compulsory vaccination was to be brought to an end by the repeal of the Vaccination Acts under subsection 5 of this Clause. Was this because of administrative difficulty or on medical grounds? Dr. BARNETT STROSS did not agree with Mr. Hastings. In hospitals, nurses and probationers were often expected to carry out hypodermic inoculations, and inoculation against diphtheria was usually a straightforward hypodermic injection.

Mr. BEVAN said there might be some forms of immunization or vaccination in which it was necessary to have special knowledge and it would be desirable for the local health authority to arrange for it to be carried out at clinics by a person with special experience. That was not ruled out by the Clause, but there were general forms of immunization and vaccination that the general practitioner could properly perform. The Bill provided for the general practitioner but did not exclude specialized arrangements. Compulsory vaccination had been dropped chiefly because large numbers of people were contracting out. At the same time, propaganda by the Ministry of Health urged people to have their children immunized against diphtheria and remarkable results were being achieved. In the controversy as to whether immunization or vaccination had established itself he must accept the specialist opinion that it had. The Clause was ordered to stand part of the Bill.

AMBULANCE SERVICES

On Clause 27 the Committee agreed, on the motion of Mr. KEY, to add words making it clear that the duty of a local authority to provide ambulance or similar transport existed only when there was a need for that transport; and that duty lay with the authority in whose area the need originated. Mr. BEVAN said the local health authority would have no regard to the origin of the patient but merely to his needs. The hospitals themselves would find it necessary to have a rudimentary ambulance service. A person who did not employ a doctor under the scheme but had a private doctor would get his ambulance free.

On the motion that the Clause stand part of the Bill Mrs. BRADDOCK said there would be duplication and delay in the methods proposed. The best way to deal with the ambulance service was to have a central service for the region, decentralized into areas, and alongside it a centralized bed bureau so that the regional organization would know what beds were vacant in every hospital. Mr. MESSER said that unless the ambulance service came under the same authority which was administering the hospitals there would be delay, if not confusion. Within the management committee area of a hospital there ought to be authority vested in the hospital to ensure that it would immediately get an ambulance. The hospital workers had expressed a hope that there would be a national ambulance service.

Mr. WILLINK hoped Mr. Bevan would not yield to pressure to make this a regional service. It should be normally a function for the county or county borough but with liberty to the Minister, as in the Bill, to make a larger joint unit for the purpose of an ambulance service. Dr. MORGAN supported the contention of Mrs. Braddock. He said that ambulance workers were trying to get an institute of ambulance workers with a definite training and curriculum for study. Employees of voluntary associations were unlikely to be really trained ambulance personnel.

Mr. BEVAN said all the arguments advanced by Mrs. Braddock were arguments for the merits of the local health authority ambulance service. The ambulance service was not a hospital service only—a local health authority was responsible for identifying cases to be taken to mental homes. The regional authorities were very far away from the administrative front and, after the regional plan had been made and the specialists had been appointed, the regional board would break down administratively into the hospital management committees. To add to that board a day-to-day administrative function seemed to him to be unrealistic. The local health authorities would

take exception to being under the supervision of a non-elected authority. The Clause as amended was ordered to stand part of the Bill.

PREVENTION OF ILLNESS

Mr. PIRATIN moved to amend in Clause 28 the provision respecting arrangements made by a local authority for prevention of illness, care of persons suffering from illness, or after-care of such persons by deleting the condition that "no such arrangements shall provide for the payment of money to such persons." He referred particularly to the work done by tuberculosis after-care committees and other organizations of a similar nature. He said that many a mayor's fund contributed to such people who were given lump sums of money. At present, under Memorandum 266.T., a regulation gave a fair sum to certain tuberculosis cases for after-care. The Bill would end this and there was nothing to replace it. Mr. MESSER said that Parliament was going to repeal the 1921 Act so that all the tuberculosis work would be merged with the general health services; unless provision was made for the hospital authority to follow up its cases there was a danger that the service would be retrogressive.

Mr. BEVAN said the payment of money was a function of the Ministry of National Insurance. Certain categories of assistance were provided under the health scheme, but there would be a number of categories for which a new Bill would be necessary. It would deal with the winding-up of the poor-law system. The tuberculosis scheme had done extremely good work but had the cruel defect that when a person was found to be incurable the allowance stopped. Legislation would be required to alter that.

Mr. PIRATIN withdrew his amendment and moved another to delete subsection 2 of Clause 28, which authorized a local health authority to recover charges from persons availing themselves of the services provided under the Clause. Mr. BEVAN resisted the amendment. It would be impracticable to ensure that anyone who needed someone in attendance should have that service free.

The amendment was negatived, and on the question that the Clause as amended stand part of the Bill, Mr. REID asked for guidance on the interpretation of the words "the care of persons suffering from illness." Mr. LINSTEAD asked for some explanation of the arrangements to be made for prevention of illness. In Clause 28 the Committee had one of the few provisions in the Bill aimed at prevention as distinct from treatment and cure. Was the Minister asking for a large extension of educational health services at the expense of the local authority? Mr. WILLINK said the Minister had had representations from the National Council for Mental Health, which was concerned in providing for the care of those who were ill though they might not fall within the categories of illness or mental defect. There were serious case of epilepsy and of neurosis. Did the Minister feel that he was able to make provision for helping such persons.

Mr. BEVAN said certain persons would be unable to follow some occupations but could follow others. The local authority would be empowered to establish and supervise special industrial premises in which such people could carry out their employment. Colonies could be established for persons suffering from certain disabilities. It was not, however, intended to apply this extensively. The Clause as amended was ordered to stand part of the Bill, as also was, with a minor amendment, Clause 29 (Domestic Help).

APPOINTED DAY

Clause 30 was also ordered to stand part of the Bill. Mr. BEVAN remarked that the administrative work to be done after Parliament passed the Bill would be enormous, and considerable time would elapse before the whole of the scheme was in operation. Even after that the full service would depend upon its being properly manned. The country was short of doctors, specialists, dentists, and health centres. He inclined to the view that until they could build new health centres they should adapt old buildings. It was intended that the Bill should come into operation on April 1, 1948. He did not think it would be possible to introduce it before that. It must be synchronized so far as possible with the National Health provisions. It would come into operation in different stages. He hoped to appoint the regional boards quickly; the local authorities would become authorities under the Bill as soon as it was passed. The Clause was ordered to stand part of the Bill.

LOCAL MEDICAL COMMITTEES

The Committee proceeded to examination of part 4 of the Bill which deals with general medical and dental services, pharmaceutical services, and supplementary ophthalmic services. On Clause 31 Mr. WILLINK drew attention to subsection 3 providing that the Minister may by order vary the constitution of an executive council. He said the set-up of the new body with which doctors were to be in contact had given general satisfaction but the Minister was asking for a blank cheque of power to vary it. Mr. BEVAN said variation took place only after consultation with the local executive council concerned. The Minister did not act arbitrarily. Some of the functions of an executive council must be over a wider area, for example, in price-fixing for chemists' prescriptions. The Clause was ordered to stand part of the Bill.

On Clause 32 Mr. WILLINK moved that the term in the Bill the "Medical Practitioner Committee" should instead be termed the "Local Medical Committee." He pointed out that this would avoid confusion between the two bodies which the Bill termed "Medical Practices Committee" and "Medical Practitioner Committee." The amendment was agreed to and the Clause as amended was ordered to stand part of the Bill.

THE SPENS COMMITTEE REPORT

Mr. RICHARD LAW moved to add a new subsection to Clause 33 to provide that where the Minister on the advice on the Central Council was satisfied that by reason of the scattered population, or other special circumstances, it would not be practicable to give the inhabitants of an area, or a considerable proportion of them, satisfactory medical attention if the remuneration of the medical practitioners were by way only of capitation fees, they should be paid in addition such annual salary as might be prescribed. There was no word in the Bill stating what the conditions of the State medical service would be. If authoritative reports were to be believed, the Minister told the medical profession before Second Reading that the payment of general practitioners would be largely by a salary; yet he told the House on Second Reading that it would be substantially by capitation fee. Mr. Law hoped the Minister still had an open mind in this matter and that now he had received the Spens Committee Report he would feel able to give his intentions legislative effect in this Bill.

Mr. Law drew from the Spens Report the conclusion that to avoid a deterioration in the general practitioner service the monetary reward would have to be greater than in the past. He also inferred that there should be elbow-room within whatever scale of payment might be decided upon so that the skilled, efficient, and conscientious doctor might expect a greater financial reward, and so that the doctor who had exceptional skill in dealing with his family patients could expect a very high salary indeed. He took it that the Minister and the Committee would agree with the objectives that the Spens Committee had outlined. How could these objectives be met unless the Minister abandoned his idea of payment by basic salary and went back to a capitation fee alone, except in the under-doctored areas? He did not see how the Minister could make the principles of the Spens Report effective by a varying salary scale. Nor what standard Mr. Bevan could lay down which could justify one doctor receiving a higher salary than another. The Spens Committee itself decided that exceptional medical degrees would be an ineffective standard for exceptional financial rewards. It seemed to him that the only way to get round the difficulty of deciding how to give varying degrees of reward in a comprehensive State medical service was to allow the patient himself to decide. Where a doctor by his skill, sympathy, and devotion attracted patients he should be rewarded. He hoped Mr. Bevan would abandon his idea of a basic salary and go back to the principle of a capitation fee which would vary with the number of patients a doctor had on his list.

THE MINISTER'S VIEWS ON REMUNERATION

Mr. BEVAN said it was not only unprecedented but undesirable to put the method of remuneration in a Bill. That was not done in the original Health Insurance Act and had not been in any of the Acts since then. Parliament could have no more unpleasant duty than to argue about wages and conditions. That was much better done by regulation, and he believed the doctors would prefer it so. He did not think the Central Council was the appropriate body for giving advice on this matter. He was unable that day to indicate the attitude of the Government towards the Spens Committee's Report. He would like to see the principles of that Report expressed in a definite formula within the framework of the Bill. At the moment they were in the form of abstract principles, but the committee had provided a valuable document and he was grateful to its chairman and members.

Mr. Bevan said he was firmly convinced it was necessary to have an element of basic salary in the doctors' remuneration. A young doctor must be able to start work with his livelihood assured. At present young doctors sometimes spent a substantial number of years before they could win anything like a reasonable livelihood. The doctor was fairly old before he started, and either he could not get a family or could not keep

one under the conditions in which some doctors had to live. The arguments for a basic salary were overwhelming. The medical profession contained a number of dedicated persons, but he had not been able to see in it, in general, any more idealistic attitude towards remuneration than existed in any other profession. Some element of punishment and of reward was necessary. For that reason he had come down on the side of capitation as part of the pay. If the system was full salary, then one had to allocate patients among the doctors and doctors among the patients. That would result in an unhealthy relationship between patient and doctor. Therefore the Ministry found it necessary to have capitation. When the regulations were drawn up, he thought there would have to be a ceiling to the capitation and other modifications might be necessary. These would be subjects for negotiation with representatives of the profession. He was in consultation with the profession on these matters, and he preferred that the consultations should reach a more advanced stage before he expressed any definite opinion. The Government was clear where it stood. A uniform capitation and a variation of the basic salary was far better than a variation of capitation. It would give an opportunity for providing a principle by which the Ministry could attract doctors into under-doctored areas. Parliament would have an opportunity later of discussing the regulations when they were made.

Mr. REID said that to leave a blank cheque in the Bill on a matter of this importance was wrong. The Opposition proposed that there should be put in the Bill a clear direction in principle as to the method by which the remuneration was to be made up. Wherever it was found that there was a need to attract doctors to an especially difficult or unpopular area then the right way to attract them was to give a salary in addition to the capitation fee. If the area was very difficult or unpopular then it might require £500. The determination of the area, and of the amount necessary, was an administrative matter which might change from year to year and which no sensible person would put into the Bill. The Minister had provided no argument for giving a salary to a doctor with the same experience who was practising in an over-doctored, or average well-doctored area. One must assume that the only argument for giving him a salary was the doctrinaire one that all doctors should be the servants of the State and not of their patients. With regard to the young doctor, in most cases the right way for him to start was as an assistant, and the Bill left Mr. Reid in doubt how the position of assistant was to be preserved when the Bill came into operation. He agreed that Mr. Bevan was right in contending that the words "the advice of the Central Council" should be taken out of the amendment proposed by Mr. Law. There was a proposal in the White Paper that the capitation fee was to diminish in scale as the total number of patients rose. To increase the size of the panel did not alter the proportion of the people coming to the surgery. Therefore the payment must be per patient. Why should the good doctor be paid on the average less per patient than the bad doctor? In a particular area they generally found that the doctor with the large practice was the doctor who inspired most confidence.

Resuming on June 19 the discussion of the amendment proposed by Mr. Law, Mr. LINSTEAD said the facts did not justify the contention advanced by Mr. Bevan that it was necessary to provide salaries to help the young doctor to establish himself immediately after qualification. Nothing was easier than for the young medical practitioner to get financial support to establish himself in practice. He was opposed to the proposal to pay by salary but could not see that payment by salary or by capitation fee would make much difference for many years to come. There was going to be a shortage of doctors and however remuneration was made up all doctors would have all the patients they were allowed to take. The real question was how far the Committee wished the doctor to be an independent practitioner. The Opposition felt that when a salary element was introduced the doctor was made the servant of the State through the regional board.

METHOD OF PAYMENT

Mr. SOMERVILLE HASTINGS hoped the Minister would not fix a hard-and-fast rule on remuneration and salaries. Payment partly by salary and partly by capitation fee would be most popular among doctors. According to the questionary issued about two years ago by the British Medical Association, the majority of those who had filled in the forms decided that that was the most satisfactory method. Mr. Hastings suggested that very soon the majority of doctors would wish to be paid by salary. The advantage of capitation was that by it a doctor built up goodwill. In the future goodwill would not be saleable and that advantage would disappear. It would not always be easy for a young man to start in practice. The young man starting in practice with a small salary and a free list would have to take those people who had not expressed a choice or could not be accommodated on the list of the doctor they had chosen. In addition the young man would have to try to attract as many patients as he could from other people's lists—not an elevating procedure. He would have plenty of time to contemplate how much better off he would be if he were paid a reasonable salary. Capitation gave the patient too much power over the doctor.

Sir HUGH LUCAS-TOOTH remarked that Mr. Bevan had said it was essential to have an element of reward and punishment. Did he mean that the basic salary should be used for some disciplinary purpose? Mr. BEVAN said obviously the reward and punishment related to the capitation grant because if a doctor was not industrious the patients would transfer to another doctor.

Dr. STEPHEN TAYLOR said the Spens Report made him feel there was a lot to be said for having a capitation fee element. Doctors after reaching a certain age deliberately cut down the work which they did. Provided patients could recognize a good doctor there was much to be said for their playing a part in deciding how much a doctor should get. In some parts of England doctors were divided into classes—the non-examining and the examining doctors. A doctor with higher qualifications had a case for having slightly more income than a doctor who did not take those qualifications. There was a case for giving doctors a bit more on their basic salaries as they got older. There was a case for the cash incentive for doctors to take a three-months refresher course after every ten years. Mr. WILLINK said a general service organized by the State could not be a service in which promotion was obtained from one grade to another. It was clear from what Mr. Bevan had said that the incentive to gather in people for whom the general practitioner must care was going to be reduced by every pound the basic salary was increased.

NEED FOR A BASIC SALARY

Mr. BEVAN said that members of the Opposition had been misled by uninstructed propaganda issued when the Bill was first published. All the references to State service, bureaucratic control of medical services, and to the virtue of unlimited competition between doctors had no relation to the proposition before the Committee. There was no need for him to repeat the arguments in favour of an elementary basic salary. At the same time he had accepted the proposition that a full salaried service was not reasonable and in existing circumstances would not operate to the best advantage of the community. Therefore he had reached a compromise between the two principles, introducing the element of security for the individual and the element of competition to refresh the service. Dr. Taylor had suggested that it was not attractive to have a diminishing capitation rate when reaching the higher lists. Mr. Bevan had proposed that to try to destroy the worst features of the panel system. The unlimited panel system now had for Conservatives almost mystic virtues. In the passage of years it had acquired a nimbus, but in 1911 it had horns. Very great evils were established in the building up of a panel system, brought about by the competition between the doctors themselves, and this led to a very undesirable situation. He had an open mind on the desirability of declining the capitation rate. It was not a matter of fundamental principle. It would have to be examined in the light of discussions with the profession. He was not impressed by what doctors said in their questionary. The amendment proposed by Mr. Law was defeated by 25 to 12.

ASSISTANTS IN GENERAL PRACTICE

Col. STODDARD-SCOTT moved to add a proviso that nothing in the Act and no regulation should interfere with the right of a general practitioner who undertook to provide general medical services to employ and pay under contract with himself an assistant. It was advantageous for a young man qualifying in medicine to act as an assistant to a capable principal. Mr. BEVAN thought this was a desirable way of introducing a doctor to general practice. But the Government could not give general practitioners an unrestricted right to take on as many assistants as they liked, because that would interfere with the proper distribution of doctors. It was intended that there should be no restriction on the right of general practitioners to have assistants in areas where the Executive Council agreed that these could be employed because the area was not over-doctored. Assistants would not be on the list but would be registered doctors.

Mr. HASTINGS asked whether the assistant would be bound by agreement with his principal not to start practice on his own in the same area. Mr. BEVAN replied that it would not be reasonable if a doctor took on an assistant who remained with him for some time for that assistant to go on the list for that particular area. He had already had discussions with the profession on what area of restriction should be imposed. The amendment was withdrawn.

On the motion that Clause 33 stand part of the Bill Col. STODDARD-SCOTT said subsection 2 (d) of the Clause dealt with certification and suggested that this would be decided by regulation. These regulations would refer only to doctors inside the service. He desired an assurance that doctors outside the scheme would be able to issue certificates which would be accepted. Mr. BEVAN said what certificates were accepted was a matter for the Minister of National Insurance. He himself thought that the certificate of doctors, whether in the public service or outside, stood on an equal footing. Clause 33 was ordered to stand part of the Bill.

DISTRIBUTION OF DOCTORS

Mr. WILLINK, moving an amendment which was rejected, said that the distribution of practitioners would improve automatically on the introduction of this Bill without the measures proposed in Clause 34. The Bill would enable 100% of the population to be safe patients from the financial point of view. The moment Mr. Bevan controlled distribution he automatically affected the value of goodwill. Some first-class doctors would shrink from the controls which had to be introduced into a service of this kind. It was in the public interest for such a doctor to be able to say that the bulk of his work was to be in private practice but that he would like to have a panel of 500 or something of that kind.

Mr. BEVAN said that Mr. Willink's point of view involved continuation of the sale and purchase of practices; it also involved a doctor choosing his own successor. Having decided as a first principle to abolish the sale and purchase of practices Parliament had then to determine the principle of succession. To that the machinery under Clause 34 was the necessary corollary. It was accepted by the medical profession that there was bad distribution of medical services. Therefore the procedure involved a negative control. In the future the young doctor would receive information from a central pool as to what areas he could go to at once and the areas where he would not be acceptable in the public service. He would know within a day and would not have to advertise or ask his friends. When there was a vacancy the local Executive Council would notify the local doctors' committee, so Parliament got the doctors themselves influencing the appointment of their new colleagues, the local executive appointing, and the central committee confirming the appointment.

Captain BAIRD asked what happened when there was a vacancy in an area for one doctor and five applied. Mr. BEVAN said in that case the doctors in the area would be invited to suggest a doctor who in turn would be suggested to the Executive Council. With the permission of the medical practices committee a contract would be entered into. Dr. TAYLOR hoped that every vacancy would be advertised in the medical journals so as to give the maximum field of choice. Practices should not be inherited.

Referring to other inquiries Mr. BEVAN said that all these things depended on sensible administration and could not be put into the Bill. There could be an appeal to the medical practices committee in the very rare circumstances in which irregular things had been done and undue influence exercised.

CONSULTATION WITH LOCAL MEDICAL COMMITTEE

On June 20 Mr. WILLINK moved an amendment to Clause 34. He proposed that applications by doctors to be included in the list of practitioners undertaking to provide general medical services if made in the prescribed manner to an executive council should be referred by that council to the local medical committee and that the recommendations made by that committee and the decision of the council thereon should be submitted to the medical practices committee. During the second reading of the debate he had formed the impression that Mr. Bevan very largely agreed that the choice of individual practitioners was not an appropriate function for one central committee. Mr. Bevan had said in that debate that in fact the executive would appoint the practitioners and they would be referred to the medical practices committee solely on the question whether that particular area was under-doctored or over-doctored. He noted that Mr. Bevan had put down an amendment to provide that before selecting any persons under this clause the medical practices committee should consult the executive council concerned and that council should, if a local medical committee had been formed for the area of the council, consult that committee before expressing its views on the persons to be selected.

Mr. BEVAN said there was not much between him and Mr. Willink. He thought the amendments he had put down satisfied the necessities of the case. The only circumstances in which the medical practices committee would be likely to question the appointment would be where some improper action had taken place. In order that the committee might have authority to move it was necessary that, formally, they would make the appointment. He did not mean that the executive council should send forward three or four names to the medical practices committee. The local medical committee would say to the medical practices committee: "We propose to appoint Mr. Blank." The medical practices committee would never know who Mr. Blank was unless somebody said to that committee: "Something improper has happened down here." Did anybody imagine that a busy central committee was going to worry itself about the whole of these individual appointments? If the committee did not concern itself when something wrong had happened the Minister must do so, and the Government did not wish to drag the Minister into it. The executive council would proceed to do the job in the normal way, consult the local doctors, make the appointment, and send the name in to the medical practices committee, who would then authorize the appointment. Supposing a name were sent in and representations came from an authoritative quarter that there had been something improper in the selection, the medical practices committee would make an inquiry and say: "We are sorry, but we cannot confirm this appointment. Try again and make another appointment."

Mr. Willink's amendment was by leave withdrawn, and the Committee accepted Mr. Bevan's amendment:

"Before selecting any persons under this sub-section, the Medical Practices Committee shall consult the Executive Council concerned and that Council shall if a Local Medical Committee has been formed for the area of that Council and recognized under the last but one foregoing Section consult that committee before expressing their views on the persons concerned."

FAMILY PRACTICES

Mr. LINSTEAD moved, and later withdrew, an additional subsection to provide that the medical practices committee, medical practitioner committee, and executive council in exercising any power or determining any appeal under Clause 34 should have regard to a desire expressed by members of a family to work together or by a medical practitioner to succeed to the practice of his father or other near relative. He also wished to provide that these bodies should have regard to the views of the remaining members of a partnership before selecting a candidate to fill the vacancy. Mr. BEVAN said he did not think the committee should give a special statutory value to family relationships. It was often desirable that there should not be too much inbreeding in local areas and that there should be more infiltration from outside. He agreed that tradition would inevitably have its influence on the selection, but he did not wish to give directions to local executive councils about this; but it was just the sort of thing they ought to be free to do. The Minister ought not to tell local executive councils what sort of grounds they should consider in making an appointment.

On the motion that Clause 34 stand part of the Bill Sir HUGH LUCAS-TOOTH inquired the meaning of "already adequate" in the proviso that the medical practices committee could refuse an application to practise on the grounds that the number of doctors undertaking general medical services in the area or part of the area was already adequate. Mr. BEVAN said there could be no absolute definition of adequacy. Adequacy related first to the general supply of doctors for the country as a whole, secondly to the way that supply had distributed itself over the country, and, after these considerations had been borne in mind, to the special requirements of the areas under discussion. In some areas more doctors were needed because the average age of the population was higher. The Bill provided that the decision on the needs of an area would be made by the medical practices committee on which the majority would be doctors with experience of what was required. The Clause as amended was approved by 24 to 12.

PROHIBITION OF SALE OF PRACTICES

On Clause 25 Mr. WILLINK moved to add a proviso that if one or more members of a partnership were included in a list of practitioners undertaking to provide general medical service but one or more other members of that partnership were not included in such a list, nothing in the Act would apply to any sale of goodwill by a member of the partnership not included in that list. In English law goodwill was the asset of the partnership and not of the individual partners. What was to happen between now and the appointed day to partnerships where only one or some of the partners engaged in panel practice? This Clause would involve the dissolution of hundreds of partnerships all over the country before the appointed day. The Minister desired group practice, but the prohibition in the Clause would strike a grievous blow at co-operative work between medical men.

Mr. HENRY STRAUSS said he suspected that when drafting subsection 1 of the Clause the draftsmen had not partnerships

in mind. The Clause was so obscure that any doctor or any doctor's representative after the doctor's death or any doctor in an existing partnership who consulted a lawyer, assuming this Clause went through in its present form or even as amended by the amendments proposed by Mr. Willink, could only be advised to wind up the partnership and dissolve it before the appointed day.

Mr. BEVAN saw nothing obscure in the Clause. He said that hitherto the Clause had been attacked on the ground that it was terrorizing and dealt comprehensively with so many different varieties of circumstances where persons might try to secure payment for goodwill even after compensation had taken place for loss of goodwill. Most of the terror had been taken out, although the protection for the Exchequer still remained. He was advised that the amendment proposed by Mr. Willink was unnecessary. But if the language of the Clause would have the effect of causing partnerships to be universally dissolved then the Clause would have to be amended. He promised to look into the question. Mr. Willink withdrew his amendment.

TRIAL BY JURY

In subsection 2, dealing with penalties for the new offence of unlawfully selling or buying a goodwill or part of a goodwill, Mr. WILLINK moved an amendment to provide that on summary conviction an offender should be liable to a fine not exceeding £100 and that the larger penalties proposed in the Bill should be applicable only in cases of conviction on indictment. He said that in another Bill the Government recently accepted the argument that it was inappropriate to give such powers to courts of summary jurisdiction. The Bill would give rise to questions of subtlety and difficulty. There were questions of allocation of the consideration given for a house and how far payment was because it was a nice house and how far because it had a surgery. There was a splitting of a series of transactions with the apportioning of consideration for the practice as against other elements in the contract. There was also the question whether money given by a son to his father was given in contemplation of his succeeding his father in the practice. Clearly more serious cases ought to go for trial by jury.

Mr. BEVAN agreed that where the higher penalties were involved there was a good case for the matter being tried by a court with a jury. He thought Mr. Willink might leave him to move an amendment at a subsequent stage. He did not wish the penalties to be too light. Parliament had met many examples of persons who went on violating the law because they made profit by that violation even after paying the penalties. The Government did not wish that to be done. These cases would occur only on the part of doctors who had entirely misrepresented to the medical practices committee what they had done or who had neglected to protect themselves by getting a certificate from the medical practices committee or who were persons obviously with felonious intent.

SALE OF A DOCTOR'S HOUSE

Mr. WILLINK next moved to omit subsection 4 dealing with the sale, letting, or other disposition of premises previously used by a doctor for the purposes of his practice. Mr. Willink said that although ingenious persons might work a sale of goodwill into the sale of the house the Opposition felt that this subsection was so unsatisfactory that its omission must be moved. It set up criteria which seemed to be unworkable, and it also covered cases which Parliament never intended to cover. The danger was not of people being unfairly convicted but of professional men being unfairly brought before the courts and subjected to embarrassment and expense. The criminal law should be clearly expressed. Mr. STRAUSS said part of the mischief of the subsection as it stood was that it created a criminal offence not dependent on any guilty intention.

Mr. BEVAN agreed that Parliament ought not to pass bad laws on the assumption that there was a good public prosecutor. He had considered this matter carefully because it did create a number of criminal offences, and the Government did not want to torment innocent people. At the same time the Exchequer had made a generous provision for the payment of £66,000,000 to the doctors in compensation for the loss of goodwill, which was far more than the medical profession ever expected. The State during many years had permitted a most pernicious system to grow up, but the doctors were as much victims of that system as they were beneficiaries from it; and when the State stepped in to destroy that system the Government had said that compensation must be paid. These practices had existed for a considerable time and were extremely involved, and he felt that some doctors who had not received compensation might want some payment for their goodwill which had already been bought by the State. The Government had to consider all the various ways in which doctors obtained pecuniary advantage for their goodwill. One of the most valuable was the doctor's house. He was advised that it would be perfectly proper to give more for a doctor's house because of the physical structure of the house. If there was a surgery, if there was apparatus, if there was a special structural arrangement it would be proper to pay more for the house because of those conveniences. What the subsection did was to prevent the seller from obtaining a sum of money in respect of the fact that goodwill attached to the house.

Mr. STRAUSS asked the Committee to assume that the house had a special value because it had always been a doctor's house and that therefore whoever went to live in it attracted a certain amount of goodwill. The executors of the late doctor might not desire that extra value, but if the house were put up for auction the price would be influenced by the fact that it had been a doctor's house. If the house had been sold for more than if it had never been a doctor's house an offence would have been committed, though there was no guilty intention. Did Mr. Bevan intend that it should be impossible for the widow to sell that house by auction without risking a criminal prosecution? Mr. BEVAN said he could not accept that. If goodwill had been made illegal from April 1, 1948, that would entirely change the value of doctors' houses in respect of the goodwill attaching to them. The Committee rejected Mr. Willink's proposal by 21 to 10.

In subsection 5 of Clause 34 dealing with valuable considerations given by or to partners in pursuance of any partnership agreement between doctors Mr. WILLINK moved to insert the words "made after the passage of this Act." He asked who could say what ought to be reckoned the appropriate consideration in 1947 on the basis of the facts of 1933 or 1943? Under the Bill if the shares of the partnership were inappropriate to the energy, skill, and success of the partners then there would be a criminal offence. The only way in which the Government proposal could be workable was by making it affect partnership agreements entered into after the Act. What was to happen supposing that there had been an agreement for the acquisition for the share of a partnership, the payments to be made in five instalments payable at intervals of two years, two instalments having been paid and three remaining to be paid? The payment of the third, fourth, and fifth instalments would be a crime in respect of something which had already been acquired. His amendment was intended to get rid of all pre-Act partnerships so far as this crime was concerned.

Mr. BEVAN said people ought not to be able to obtain money under false pretences. It was not the case that where a sale had taken place before the appointed day instalments due to be paid afterwards would have to cease because if they were paid that would be a crime. He was advised that under subsection 1 the legal sale would have taken place before, and therefore it was not indictable. It would be foolish to make an offence prospective. If the language of the clause bore that interpretation then it must be altered, but he was informed that it did not. There was no real difficulty in deciding the services rendered by one partner to another. A certificate obtained for these transactions from the medical practices committee was ample protection. A method of protecting the doctor from the consequences of ambiguity had been created.

Mr. HOPKIN MORRIS asked the Minister to reconsider subsections 1 and 5, and Mr. STRAUSS appealed to him to consult the Law Officers before the next sitting. He said the Minister was running a risk that the medical practices committee would be approached with questions about every existing partnership. The amendment was defeated by 21 to 7, and the Committee agreed to an amendment proposed by Mr. BEVAN to insert the words "having regard to the circumstances at a time when agreement was made." The Committee then adjourned.

Grants for Teaching Hospitals

In respect of the academic year 1945–6 an interim distribution of grants for teaching hospitals has been made thus: Universities in England and Wales £166,169, University of Aberdeen £9,046, University of Edinburgh £24,048, University of Glasgow £22,678, University of St. Andrews £8,027. The University Grants Committee will make recommendations for a further final distribution of the grant available for 1945–6.

Artificial Limbs.—Mr. WILFRED PALING on June 20 told Sir Ian Fraser that during the last six months deliveries of artificial limbs exceeded orders placed. He had no reason to think that this position would not be maintained. He anticipated that the time would soon arrive when the supply and repair of artificial limbs would be effected more expeditiously.

Notes in Brief

Mr. William Leonard stated on June 20 that the expressions "registered medical practitioner" and "duly qualified medical practitioner" were synonymous by virtue of Section 34 of the Medical Act, 1858. Current drafting practice favoured the former.

Universities and Colleges

UNIVERSITY OF OXFORD

I. V. Polunin, B.M., of Queen's College has been elected to the Schorstein Research Fellowship in Medical Science for one year from October 1.

UNIVERSITY OF GLASGOW

At a graduation ceremony on June 19 the honorary degree of LL.D. was conferred on Archibald Wilson Harington, M.D., formerly Muirhead Professor of Medicine in the University, and on Sir Edward Mellanby, K.C.B., M.D., F.R.S., Secretary of the Medical Research Council.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Prime Minister, who is a Hunterian Trustee, dined with the members of the Council, at the College, on June 5. He saw the damage which had been caused to the buildings by enemy action, and inspected the plans for rebuilding. Others present were:

The Earl of Athlone (Hunterian Trustee), Sir Alfred Webb-Johnson, Bt. (President), Sir William Collins (Hunterian Trustee), Sir Hugh Lett, Bt., Sir Max Page (Vice President), Sir Heneage Ogilvie (Vice President), Mr. A. F. Burgess, Mr. Victor Bonney, Sir James Walton, Mr. H. S. Souttar, Mr. Cecil P. G. Wakeley, Mr. L. E. C. Norbury, Mr. V. Zachary Cope, Prof. Hugh Cairns, Mr. P. H. Mitchiner, Mr. A. Tudor Edwards, Surg. Capt. Lambert Rogers, Mr. Geoffrey Keynes, Mr. R. J. McNeill Love, Dr. H. Guy Dain, Mr. G. F. Stebbing, Mr. V. E. Negus, Dr. A. D. Marston, Mr. George Black, Prof. F. Wood-Jones, Prof. R. A. Willis, Prof. A. J. E. Cave, and Mr. W. F. Davis (assistant secretary).

ENGLISH CONJOINT BOARD

Diploma in Industrial Health

The Examining Board in England set up by the Royal College of Physicians of London and the Royal College of Surgeons has issued regulations for obtaining the Diploma in Industrial Health (D.I.H., R.C.P.Lond.&R.C.S.Eng.). It may be granted to those who possess a qualification registrable in the British *Medical Register* and to graduates in medicine and surgery of those universities and medical colleges recognized by the Examining Board in England for the purpose, who comply with the regulations. Candidates for the diploma are required to follow the curriculum of study, to pass the examinations, and to pay the prescribed fees, but exemption from Part I may be granted to candidates who hold a recognized Certificate in Public Health. Copies of the regulations may be had from the secretary, Examination Hall, 8–11 Queen Square, London, W.C.1.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* infectious diseases were less prevalent. There were decreases in whooping-cough 310, scarlet fever 83, acute pneumonia 50, measles 35.

The decline in whooping-cough was fairly widespread, and the chief falls were Lancashire 56, Warwickshire 36, Carmarthenshire 36, Surrey 34, London 31, Essex 29. The only change of any size in the local returns of diphtheria was a fall of 27 in London. A small decrease in scarlet fever was fairly general, and the only large fall was Middlesex 33. Considerable variations occurred in the trend of measles; the largest rises were London 106, Yorkshire West Riding 89, Surrey 52, and notable decreases were Middlesex 82, Lancashire 78, Durham 46, Warwickshire 45.

Notifications of dysentery declined by 14. The largest returns were Lancashire 40, London 17, Warwickshire 12, Dorsetshire 11.

In *Scotland* the only rise recorded was measles 12; the falls included acute primary pneumonia 67, scarlet fever 12, whooping-cough 11, dysentery 10. The decline in dysentery was due to the experience of the western area, where there were only 7 cases, compared to 24 in the preceding week.

In *Eire* also a general fall in prevalence was recorded; the only rise was whooping-cough 15. Only 27 cases of diphtheria were notified, spread over 16 registration areas.

In *Northern Ireland* an increase was reported for whooping-cough 28, diphtheria 7, measles 7, while scarlet fever declined by 6. All the cases of whooping-cough were notified in Belfast C.B.

Week Ending June 15.

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 866, whooping-cough 1,625, diphtheria 262, measles 4,415, acute pneumonia 505, cerebrospinal fever 44, dysentery 146, poliomyelitis 12, smallpox 2, paratyphoid 4, typhoid 7.

No. 23

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 8.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great town in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes diesase not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	47	2	21	1	—	52	2	23	1	1
Deaths		2	—				—	—		
Diphtheria	304	16	85	27	15	423	23	103	78	10
Deaths	5	2	1	1	—	8	—	1	2	1
Dysentery	149	17	36	—	—	426	48	119	1	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	—	2	1	—	5	—	—		—
Deaths		—					2			
Erysipelas			29	9	2			47	4	1
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				27					28	
Deaths	49	1	8	7	2	45	5	5	9	3
Measles*	3,896	1073	652	48	12	8,463	472	325	40	14
Deaths	2	—	1	—	—	4	—	2	1	1
Ophthalmia neonatorum	60	5	8	1	—	62	7	14	—	—
Deaths										
Paratyphoid fever	2	1	—	2(B)	—	4	—	7(B)	—	—
Deaths	—	—	—	—	1(B)	—	—	—	—	—
Pneumonia, influenzal	546	28	11	10	5	427	23	4	12	3
Deaths (from influenza)†	3	1	1	2	—	15	1	—		—
Pneumonia, primary			161	35				169	20	
Deaths		28		8	7		20		7	6
Polio-encephalitis, acute	—	—				3	—			
Deaths		—					—			
Poliomyelitis, acute	9	—	1	3	—	6	—	1		—
Deaths		—					—			
Puerperal fever		2	32		—		1	12		1
Deaths										
Puerperal pyrexia‡	134	13	17	—	—	128	7	11	1	1
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	987	84	164	23	24	1,409	45	210	21	34
Deaths	—	—	—	—	—	1	—	—	—	—
Smallpox	3	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	4	—	3	8	1	6	2	—	3	3
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	2	1	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,749	162	81	45	44	1,033	53	88	28	20
Deaths	9	—	—	2	—	2	—	1	—	—
Deaths (0–1 year)	322	41	48	30	17	283	35	50	28	23
Infant mortality rate (per 1,000 live births)										
Deaths (excluding stillbirths)	4,116	570	534	178	126	4,060	585	578	219	112
Annual death rate (per 1,000 persons living)			11·8	11·4				13·1	14·1	
Live births	7,994	1155	980	449	257	6,729	779	876	460	268
Annual rate per 1,000 persons living			19·7	28·8				17·5	29·7	
Stillbirths	236	26	38			209	21	25		
Rate per 1,000 total births (including stillborn)			37					28		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Medical News

A general meeting of the Medical Society for the Study of Venereal Diseases will be held at 11, Chandos Street, W., to-day, Saturday, June 29, at 2.30 p.m., when there will be a discussion on "The Treatment of the Infected Female by Penicillin."

A meeting of the Royal Sanitary Institute will be held at Stoke-on-Trent Town Hall on Saturday, July 6, at 2.15 p.m., when Dr. A. Meiklejohn will read a paper on "Silicosis."

The *X*-ray Analysis Group of the Institute of Physics announces that its 1946 Conference will take place at the Royal Institution, 19, Albemarle Street, London, W., on July 9, 10, and 11 next, and is open to all without charge. It is hoped that several distinguished foreign scientists will participate in the proceedings. Further information will shortly be available from the honorary secretary, Mr. F. A. Bannister, F.Inst.P., Department of Mineralogy, British Museum (Natural History), Cromwell Road, S.W.7.

The County Borough Group of the Society of Medical Officers of Health have arranged to hold its annual meeting and week-end conference from July 19 to 22 at the School of Domestic Economy, Eastbourne, under the presidency of Dr. R. H. H. Jolly. The programme includes "The Care of Homeless Children," by Dr. J. Fenton, M.O.H., Eastbourne; "The Peckham Pioneer Health Centre," by Dr. G. Scott Williamson; "The New National Health Service," by Dr. J. F. Galloway, M.O.H. Doncaster; "Medical Administration as a Career," by Prof. J. M. Mackintosh. The hon. secretary of the Group is Dr. J. Greenwood Wilson, City Hall, Cardiff.

The annual dinner of the Royal Medico-Psychological Association will be held at the Royal College of Physicians, 9, Queen Street, Edinburgh, on Wednesday, July 17, at 7.30 for 8 p.m.

At the recent meeting of the Senate of the Queen's University of Belfast among those on whom it is proposed to confer honorary degrees are Sir Alexander Fleming and Dr. Frederick W. Price.

The deaths of four babies, three at Auckland and one at Wellington, from tetanus traced to talcum powder are reported by a correspondent in New Zealand. The deaths occurred in the first week of June, and the authorities at the Auckland Public Hospital traced the tetanus to the talcum powder used on the infants. Immediately the cause of the deaths was announced in the Press, the distributor of a well-known brand of Australian talcum voluntarily withdrew the preparation from the market, and the New Zealand Department of Health is now considering withdrawing all supplies of talcum for sterilization. The Director-General of Health, Dr. M. H. Watt, stated that his Department had issued notices to all hospitals and to obstetricians warning them of the position and instructing the use of zinc oxide and starch instead of talcum on new-born babies.

Nutrition and Child Welfare is a periodical published at 6d. from 28, Alva Street, Edinburgh, 2, but all communications should be sent to the London office, 70, King's Road, S.W.3. The first number contains articles on "The Chair of Child Health and Infant Nutrition," by Prof. Alan Moncrieff; on why mild forms of rickets are undetected, by Dr. Ursula Shelley; and on the scientific principles of nutrition, by Dr. R. P. Cook. The journal is intended for health visitors, school nurses, nursery matrons, and nursery school teachers.

The Ministry of Health has issued a notice (Circular 133/46) on provision of medical treatment, under the Government Evacuation Scheme, for orphans and other children without suitable homes to which to return. The arrangement under which medical treatment was provided through the Local Medical War Committees has been revised. Doctors attending billeted children will from July 1 be paid through Insurance Committees, and the basis of payment will be a capitation fee of 14s. per head per annum for treatment and medicine and appliances for unaccompanied children in billets. Part-time doctors will be appointed to hostels and residential nurseries, and provision is made for medical inspection of nurseries and for medical treatment of children in sick bays.

Prof. W. M. Mitchell, M.B., F.R.C.V.S., has been appointed Principal of the Royal (Dick) Veterinary College, Edinburgh, in succession to Sir Arthur Olver, who retired last year. Prof. Mitchell has been on the staff of the College for over 30 years and is president-elect of the National Veterinary Medical Association. During the first world war he served as a captain in the R.A.V.C. and was awarded the Military Cross; in the second world war he served as major in the R.A.M.C. He will take up his new post on Oct. 1.

Dr. F. Stratton has been appointed director of the Ministry of Health Regional Transfusion Centre, Manchester, in place of Dr. J. F. Wilkinson, who has resigned.

An Order dated June 14 places pethidine and its salts in Part I of the Poisons List and on the first schedule.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Fistula-in-ano

Q.—*In a case of fistula-in-ano the internal opening is three-quarters of the way up the lateral wall of the anal canal, and seems to be almost at the upper margin of the internal sphincter. Is it safe to divide all the sphincter superficial to this?*

A.—The answer to this question depends upon the course which the fistulous track takes between the internal and external openings. If it happens to pass deep to the entire external sphincter, which is uncommon, then it would be very unwise to cut through the whole track, for incontinence would probably result. If the track goes between the subcutaneous and deep parts of the external sphincter, the lower part could be cut through, but the upper portion of the track might be better dealt with by a silk ligature, which will gradually cut its way through the mucosa. The questioner would do well to consult Miles's classical paper on the subject (*Proceedings of the Royal Society of Medicine*, 1931, **25**, 1649).

A Senior Partner Retires

Q.—*A, who has been in the practice for over 30 years, is retiring. B, the junior partner, will be joined by C, the present assistant. Is there any legal objection to B and C retaining A's name on the stationery when sending out patients' accounts?*

A.—As A is ceasing to be a partner, to keep his name on the stationery might well amount to a misrepresentation, and suggest falsely that A's services and skill were still available in the practice, and that he was still responsible for any claims made against the firm. To do this would be legally, as well as ethically, wrong.

Continuous-drip Milk for Peptic Ulcer

Q.—*In the continuous-drip milk treatment of peptic ulcer what is the correct rate of drip and the total daily quantity? Should alkalis and atropine be administered, and, if so, how?*

A.—The continuous-drip milk treatment of peptic ulcer is usually carried out through a long rubber tube sufficiently small to pass through the nose into the stomach. It is retained in position and attached to the cheek by adhesive tape. The milk is contained in a glass jar, similar to jars used for blood transfusion, and this is connected with the tube by a glass junction with a tap, or clip, enabling the rate of flow to be controlled. About 3 pints (1.7 l.) of milk or equivalent fluid food is given each 24 hours; additional water may be given either through the reservoir or directly swallowed. Alkali in powder, or aluminium hydroxide in suspension, may be added to the milk in appropriate amounts. This type of feeding has the advantage that a specimen of the gastric contents may be withdrawn from time to time by a syringe and tested for neutrality.

Atropine is not usually employed as well, but there is no reason why it should not be. Many authorities would prefer that it should be given early each morning, dissolved in several ounces of water in order that it may act directly upon a clean gastric mucosa. Although the tube may be retained almost indefinitely, it is desirable to remove and re-pass it every 48 hours at least in order to clean it, and so avoid the risk of local inflammatory reaction.

Posterior Pituitary Extracts in Labour

Q.—*At a recent postgraduate course I was informed by two obstetricians that 0.5 ml. pitocin should be given intramuscularly to the mother as soon as the baby was born. As this teaching is contrary to all I learnt as a student, I would appreciate an authoritative statement as to what the dangers of this procedure are, if any?*

A.—The questioner has raised one of the most controversial points in modern obstetrics. There is a sharp difference of opinion between those who believe that an oxytocic drug—pitocin or ergometrine—should be given as soon as the child is delivered, in order to minimize blood loss in the third stage of labour and hasten delivery of the placenta, and those who believe that no oxytocic should be given until the placenta is born.

Possible dangers of the procedure include, first, the risk of causing contraction ring, or hour-glass contraction, of the uterus. If this occurs, delivery of the placenta, and perhaps even manual removal, will be impossible until the spasm relaxes. The effect of pitocin is relatively evanescent and lasts only about half an hour, after which time it is possible to deliver the placenta in most cases. Another and more serious danger is that of "pituitary shock," fortunately rare but very alarming, and perhaps fatal, when it does appear. If pitocin is given by intramuscular injection the risk is minimal, though it is greatly increased with repeated doses of posterior pituitary extract in any form. For this reason no more than a single dose should ever be injected in the third and fourth stages of labour. A third possible risk is of acute inversion of the uterus, especially if the administration of pitocin is accompanied by a too vigorous attempt to expel the placenta.

The two opposing views were put forward in the correspondence columns of the *Journal* (1944, **2**, 353, and 511). The discussion was summed up by Prof. Moir (1944, **2**, 606), who stated: "The administration of oxytocic drugs *before* the birth of the placenta has been much disputed, and personally I dislike the routine use of such methods." He goes on to mention that 5 units (0.5 ml.) of pitocin may be given into the muscle of the uterus, through the anterior abdominal wall, in cases where the uterus is flabby and the placenta has not separated after half an hour. After mentioning reports from the United States of America, recommending the injection of ergometrine by the intravenous route with the birth of the anterior shoulder, he concludes: "The method has inherent risks and should not be used outside hospital practice."

Dry Skin in the Tropics

Q.—*A 21-year-old spinster has always had dry shiny skin on the backs of both hands. She has lived in the Tropics all her life, and has fair skin, very freckled and hairy over exposed areas, and is red-haired. General health is excellent. I would be grateful for advice as to treatment.*

A.—The exposed skin of white persons who live in tropical or subtropical regions tends to become thin, often yellowish, and to develop pigment spots and later keratoses, which may degenerate into basal-cell new growths. This is observed in Australia, and also, on the backs of the hands, among tea planters in India and Ceylon. It has been noticed in Australia that the more severe type of change is especially liable to occur in fair or reddish complexioned people of Scottish or Ulster descent. A simple cream, and avoidance of sunlight so far as possible, is about as much as can be done for the young lady mentioned above.

Virginal Erosion of the Cervix

Q.—*A nulliparous woman of 22 has had a slight mucoid vaginal discharge for six or seven years. Two gynaecologists have told her that she has a "virginal erosion." Cauterization was performed a few months ago under general anaesthesia, but the discharge persists and the erosion is still there. Is any further treatment indicated, and, if so, what? Is the condition likely to prevent conception? What are the chances of carcinoma of the cervix supervening later on?*

A.—"Virginal," or "congenital," erosion of the cervix is extremely common, and is sometimes reckoned as being present in one-third of female children at birth. Its pathological significance is therefore doubtful and there is no reason to believe that it favours the development of carcinoma in later life. Nor as a rule does it lower fertility significantly, although it may do so if it is associated with a change in cervical secretion, or if there is superadded infection. Virginal erosions are usually symptomless but sometimes do cause an increase in the natural discharge, such as appears to be present in this case. However, if it has not already been done, it might be wise to have the discharge fully examined to exclude any infection.

If the amount of discharge is not sufficient to be troublesome no treatment is required, and there would be no harm in waiting to see if fertility is affected. If, for one reason or another, further treatment is necessary, either cautery or coagulation diathermy should be judiciously applied. It should be possible to obtain a cure by such measures, and the treatment can be carried out without anaesthesia.

Starvation and Anorexia Nervosa

Q.—*Has recent clinical experience with cases of starvation led to any advance in the treatment of anorexia nervosa?*

A.—Recent clinical experience with cases of starvation has emphasized the value of milk as the most effective single foodstuff. Apart from some observations made during the Bengal famine, no satisfactory results emerged from treating cases with protein hydrolysates. More success resulted from the use of plasma, but the evidence goes to show that even in advanced states of starvation a measure of digestive and absorptive power remains in the alimentary tract.

In anorexia nervosa the digestive and absorptive power of the gut is not likely to be so markedly affected. The difficulty is to retain food long enough to permit of these processes proceeding satisfactorily. It is very doubtful if protein hydrolysates, even when safe to administer intravenously, have any real place in the treatment of this condition unless as a temporary measure in a very severe case. The administration of hydrolysates intravenously might then have a beneficial effect, even apart from the psychological standpoint.

Dysaesthesia in Disseminated Sclerosis

Q.—*A patient who has had disseminated sclerosis for 25 years complains of troublesome intermittent deep paraesthesiae. These are of a niggling tickling nature and affect the joints and muscles. They interfere seriously with sleep and intellectual activity. What is the cause of these symptoms and how can the condition be ameliorated?*

A.—Defective myelination of projectional fibre tracts may perhaps be responsible for the dysaesthesia encountered in disseminated sclerosis. It is rare for it to be so obtrusive as to render a patient sleepless and to occasion much distress. Amelioration may be difficult, but the problem can be tackled: (1) By treatment of the disease itself—e.g., with arsenic, vitamin B, liver extract, iodides, quinine. (2) By symptomatic remedies—i.e., sedatives combined with analgesic remedies. In this connexion combinations of aspirin and phenobarbital might prove helpful. Tinct. gelsemii is also worth trying. (3) Finally, vasodilator drugs might be of assistance, as in the condition described as "jittery or restless legs" (syn.: asthenia crurum paraesthetica). See K. A. Ekbom, *Acta med. scand.*, 1944, **118**, 197.

INCOME TAX

Mortgage Outside United Kingdom

S. M. has advanced money on mortgage in Eire. He has not received interest since 1939, and has waived his right to receive it. Is he liable to British tax on this interest?

*** The liability attaches to interest "arising," but where the interest has been waived, the Revenue authorities will admit exemption from the tax. S. M. should accordingly explain the facts to the tax office dealing with his income tax. Some evidence that he has given up his legal right to payment may be required.

"Initial Allowance" for Car

J. G. asks whether the initial allowance is made only when a car is bought for the first time, or does it apply also to a car bought in replacement of a former car?

*** It applies to both categories.

Remittances from Indian Pay

H. S. J. inquires whether an R.A.M.C. officer serving in India on Indian rates of pay who sends money home to his bank account in England is liable to British tax, as well as Indian tax, on the pay so remitted?

*** If the officer ranks as a "resident" in the U.K.—e.g., because his family are living here—the remittances are liable to British tax, except as regards a financial year during the whole of which he was absent from the United Kingdom. If the remittances are liable there will be some relief due in respect of the tax paid in India.

Assistant or Partner: Expenses

L. M. is to be a salaried assistant at an "All in" rate with no specified allowances. He is buying the house of a partner and will be responsible for maintaining the surgery there—but not drugs or instruments. What expenses can he claim?

*** He can claim the expenses incurred "wholly, exclusively, and necessarily" in the performance of his duties as an assistant, and since those duties include the maintenance of the surgery, running a car, and those normally borne by a partner, it would seem that he can claim to deduct much the same amount as would be deductible under Schedule E. On the other hand, if he becomes a partner he escapes from the rather more rigid rule applying to Schedule E. (e.g., any effect of the word "necessary"), and that alternative is preferable from the income tax standpoint.

Colonial Resident in R.A.M.C.

G. T. is resident and domiciled in the West Indies. Is he liable to British tax on R.A.M.C. pay?

*** Yes—if the pay is issued "out of the public revenue of the United Kingdom." (If the service had been in India and the pay issued from Indian sources it would not have been liable to British tax.)

Retirement from Practice Abroad

M. O. has practised abroad for 20 years and proposes to retire in March, 1947. He and his wife have stayed in this country recently—their stay extending into the present financial year. What is the position as regards future remittances?

*** Remittances of income will be taxable but *not* remittances of capital. The mode of making the remittances appears to be immaterial. (If the recent visit was made with a view to establishing a residence here the authorities may claim tax—less "Dominion income tax relief"—on the amounts spent here during the visit.)

LETTERS, NOTES, ETC.

Wellcome Historical Medical Museum Library

Dr. E. ASHWORTH UNDERWOOD, the director of the Wellcome Historical Medical Museum, 183–193, Euston Road, London, N.W.1, asks us to announce that a catalogue of the extensive library of the museum is being prepared, but that it will be some time before this work will be published. Meanwhile, if any person who is preparing a bibliography of the works of any writer in the field of medicine or the allied sciences desires to include the location of known copies of the different works, Dr. Underwood will be pleased to send him on request a list of the various works and separate editions of that writer which are in the library of the Wellcome Historical Medical Museum, and applications should be made to him in writing. It is hoped to open the library for the use of students at an early date, and an announcement will be made to that effect, but meanwhile the above particulars will be supplied on request.

Effect of Sweets on Teeth

Miss DOROTHY M. RICHARDSON writes: My attention having been drawn to Dr. H. E. Magee's Milroy lectures (March 30, p. 475) summarizing the results of an experiment in giving to children, as well as an extra ration of sweets, chocolate biscuits to eat at night after the teeth had been cleaned, I am moved, as an interested layman, to suggest that the result—the absence of any deleterious effects upon the children's teeth—is perhaps easily explicable and in no sense destructive of the findings of the dental profession in regard to most sweets and most biscuits. For the only "chocolate biscuits" available during the war have been the kind known as "digestive"—i.e., a rather coarse wholemeal or, alternatively, oatmeal, very thinly coated with a solution of plain chocolate. Each of these three substances is easily soluble and non-adhesive, as are, also, the plain boiled sweets which have been the sole alternative to plain chocolate. To yield convincing results the experiments should surely be made with the popular fine glutinous white-flour biscuits which both clog the gums and lodge in the interstices of the teeth; and with "sweets" of the fudge, fondant, nougat, and chocolate cream variety, all, though readily soluble, apt to cling and to lodge.

Acne and Pimples

Dr. HILTON BROWN (Edinburgh) writes: Those who have examined recruits at medical boards during the past six years must have been struck by the large number of our young men who suffer from acne and pimples. Scrubbing with soap, opening the pores, and applying antiseptic ointment, which is the usual treatment prescribed in textbooks, is worse than useless. I have found the following simple treatment most effective. (1) Use no soap at all unless the face is dirty, in which case be sure to wash off all the soap. Just dip the face in tepid water and don't dry it; let the water evaporate on the skin. On no account be rough with a towel. (2) With a piece of cotton-wool sponge all over the face with methylated spirits (the usual coloured stuff) morning and night. Get someone to sponge it on the back if acne is on the back also. (3) Dust over the hair frequently with a wrung-out sponge or cloth in order to check dandruff. In most cases a few days of this treatment will make a great improvement, and a complete cure is generally rapid.

Chorea

Surg. Lieut. M. G. JACOBY, R.N.V.R., writes from Sunderland: With reference to the answer under "Any Questions?" April 27, p. 670) on calcium balance in chorea, I should like to bring to your notice a paper published by Golla and Walter in the *Practitioner* (May, 1943). According to this there are abnormal electro-encephalographic changes in the brain in chorea similar to those occurring in epilepsy. In other words, chorea may be regarded as a mid-brain epilepsy. Another point made was that "epanutin," unlike bromides and "luminal," reversed the E.C.G. appearances, giving a normal E.C.G. in epileptic cases. As a result of the above I tried a series of six chorea cases with "epanutin," not, however, getting any results to show that this drug influenced the disease. The final comment I should like to make is that cases of chorea vary in their intensity and response to treatment as much as true epilepsy. Also the tendency is towards cure, whatever the treatment. It is therefore wrong to assume that any treatment is outstandingly successful unless a large number of cases are treated.

Dispensing by Nurses in Hospital

Mr. F. C. WILSON (Member of Council of the Pharmaceutical Society) writes: The death of a hospital patient through a nurse misreading a prescription sign has led to the suggestion that the traditional symbols of the apothecary should now give way to the metric system. In fact the metric system is coming into use, and its further employment depends on the extent to which physicians choose to adopt it in writing prescriptions. How drugs are measured is not, however, the real issue. It is as easy to slip up over a decimal point as over a drachm loop. The real issue is who measures them. In the case in question a pharmacist would have realized that the quantity was greatly in excess of the proper dose. The law should forbid the dispensing of potent drugs in hospitals except by, or under the supervision of, a pharmacist, and so dispense with the incompetent dispenser.

Records of Longevity

Dr. ANDREW ROBERTSON (Ayrshire) writes: Here in tabular form is a record of longevity which may interest readers. Can any of them beat it?

Column 1			Column 2			Column 3		
Age	*Died*		Age	*Died*			*Age*	*Died*
				Around				
82	1849	Parents of Col. 3 husband	79	1876	Parents of Col. 3 wife	Husband:	84	1902
84	1865		85	1886		Wife:	75	1906
	Their Family		I know of two sons and three daughters. All had grown-up families when they died				*Their Family*	
Age	*Died*						*Age*	*Died*
79	1883					Firstborn:	80	1935
66	1873					Third:	80	1937
75	1885					Tenth:	77	25.2.1946
65	1879							
80	1895					Only eleven out of fourteen offspring now alive. The youngest is 71		
84	1902	(See Col. 3)						
81	1901							
32	1856							

Identity Numbers for Health Records?

Dr. W. W. ANDERSON (London, N.W.) writes: I was intrigued by Mr. C. Hamblen-Thomas's suggestion (June 8, p. 902) that identity numbers be impressed on the buttocks of infants. How would he deal with the 45 million people of this country not so treated? In the absence of sartorial distinction to-day the prospect of exposure of buttocks in order to establish identity and determine sex would be, to say the least, embarrassing. I can well imagine that some would rather be unconscious during the process of proving identity, and subsequently remain so. Nevertheless, there are possibilities in the idea; the same locality might be used for the hidden display of much more useful information.

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REPORT ON REHABILITATION

BY A SPECIAL COMMITTEE OF THE B.M.A.

The Council of the Association, in December, 1944, appointed a special committee to consider the subject of rehabilitation, and to make recommendations.

The Rehabilitation Committee was composed of: Donald Hunter, F.R.C.P. (Chairman—London), J. A. L. Vaughan Jones (Deputy Chairman—Leeds), H. Guy Dain, LL.D. (Chairman of Council—Birmingham), J. D. M. Cardell, F.R.C.S. (London), Air Commodore Osmond Clarke, F.R.C.S. (London), F. S. Cooksey, (Epsom), V. Zachary Cope, F.R.C.S. (London), Brig. F. A. E. Crew, F.R.S. (Edinburgh), Ronald V. Christie, F.R.C.P. (London), J. J. R. Duthie (Midlothian), T. Ferguson, F.R.C.P.Ed. (Falkirk), Brig. Myles L. Formby, F.R.C.S. (London), W. C. Gissane, F.R.C.S. (Birmingham), I. D. Grant (Glasgow), A. E. Gregg, J.P. (London), F.R.G. Heaf, F.R.C.P. (Berkhamsted), Brig. F. D. Howitt, F.R.C.P. (London), J. T. Ingram, F.R.C.P. (Leeds), R. E. Lane, F.R.C.P. (Manchester), A. J. Lewis, F.R.C.P. (London), George MacFeat (Douglas, Lanarks), A. H. McIndoe, F.R.C.S. (London), Alexander Miller, F.R.C.S.Ed., F.R.F.P.S. (Glasgow), A. M. A. Moore, F.R.C.S. (London), H. B. Morgan, M.P. (London), A. R. Neligan (Droitwich), R. L. Newell, F.R.C.S. (Cheadle), Donald Stewart, F.R.C.P. (Birmingham), S. Wand (Birmingham), Sir Reginald Watson-Jones, F.R.C.S. (London), Donald C. Norris, F.R.C.S. (London), and G. Hamilton Hogben (London).

The subject has been considered from two aspects: the facilities that exist at the present time, and planned rehabilitation. This document, prepared by the committee, has been divided into four sections: (I) Existing facilities for rehabilitation; (II) Rehabilitation in the Services; (III) The industrial resettlement of the neurotic; and (IV) Planned rehabilitation.

I: EXISTING FACILITIES FOR REHABILITATION

It is generally agreed that rehabilitation is an integral part of all medical and surgical treatment, and true rehabilitation implies early and adequate primary treatment, although to ensure success the co-operation of industry and the various auxiliary services is vital. This presupposes that members of the medical profession are cognizant of the various statutory provisions and that they are prepared to participate fully in the national schemes. On the other hand, the average practitioner, unless he is engaged in industrial medicine, has little knowledge of the facilities that already exist, which are not necessarily interdependent, having been established to a large extent in a piecemeal manner.

The following factual statement of existing facilities, collated by the Rehabilitation Committee, is therefore published for general information.

A. THE MINISTRY OF HEALTH AND DEPARTMENT OF HEALTH FOR SCOTLAND

Recent Developments

In the larger voluntary hospitals the establishment of fracture service in association with existing orthopaedic departments has received wide acceptance in the past 10 years, and such units, with their facilities for remedial exercises, occupational therapy, and social service follow-up, formed the basis on which the wartime scheme for civilian and Service casualties was developed. Following the recommendations in the Report of the Tomlinson Interdepartmental Committee the E.M.S. extended the facilities for the rehabilitation of casualties to include all types of medical and surgical illness and injury likely to benefit by such treatment.

Special Orthopaedic Centres

In providing treatment for the physically disabled the Ministry of Health has set up a number of special orthopaedic centres, one-half of which are permanent orthopaedic hospitals with peacetime functions in addition to emergency work, and with the fullest developed rehabilitation services. They tend to take all the most complicated cases—in fact, the Ministry of Labour and National Service has asked for the co-operation of employers, trade unions, and the public in directing appropriate cases to these centres. The scope of the centres covers, apart from remedial surgery, all stages of physiotherapy, remedial exercises, games, workshop occupation, and handicrafts. Continuity of treatment and rehabilitation in one blended process, with full segregation of patients, is thus provided.

Fracture Departments

Long Stay.—There are approximately 60 long-stay fracture departments, which are similar in conception to the orthopaedic centres. They deal with long-stay cases and embody rehabilitation, but differ mainly in that (*a*) they do not handle the very complicated cases, which are transferred to the centres, and (*b*) they usually do not include full workshop occupation, though they provide occupational therapy of a handicraft type and physiotherapy. Full continuation of specialized treatment with segregation of patients is provided.

Short Stay.—Some 200 hospitals with suitable specialist service and equipment co-operate in the fracture scheme; they were situated in so-called vulnerable areas, and were therefore unsuited to the smooth treatment of long-term cases. They are used for short-stay or ambulant cases.

Fracture Clinics.—After discharge from in-patient treatment, rehabilitation follow-up treatment, such as physiotherapy, is often beneficial. Many of the above centres and departments have out-patient departments where specialized work of this kind can be done so as to fill gaps and to enable service to be given nearer home. Where possible, use is made of a number of selected clinics and hospitals able to give suitable service on the prescription of the surgeon originally attending the injury.

At the end of their hospital treatment the majority of patients in this group are completely restored to their working capacity or are sufficiently restored to health to be able to return to their previous or a similar occupation. Of the remainder—amounting to about 17% in the case of the more seriously injured patients treated in orthopaedic centres, but very much less over the whole field of injuries—the majority, though left with a permanent disability, are capable of employment, but may require a course of vocational training to enable them to take up a new occupation. A small minority are left with a